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Editorial Staff

Geo. S. Demuth and E. R. Root, Editors
H. H. Root, Assistant Editor
H. G. Rowe, Managing Editor

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To New York State Beekeepers

To give all New York State Beekeepers the best service possible, Schenectady Bee Supply Co., 242 Union St., Schenectady, N. Y., has joined hands with A. I. Root Company of Syracuse. A good stock of **ROOT QUALITY SUPPLIES AND AIRCO FOUNDATION**, both **SINGLE-PLY** and **THREE-ply** will be carried at Schenectady, with additional large stocks at Syracuse to draw from.

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"Our Pride" Capacity This Season 15,000

Although nearly doubling our output this spring, we have not quite been able to keep up with orders. Our package trade took the greater number, but remember, we have not reached the season of greatest queen demand.

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5 Bottom-boards	2.10	2.25

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HONEY MARKETS

U. S. GOVERNMENT REPORT
Information from Producing Areas (first half of May)

CALIFORNIA: Southern California—Although retarded by foggy weather in some parts of the orange belt, in general there have been more favorable conditions for nectar secretion, and present indications are for a better crop of orange honey than seemed probable two weeks ago. The orange flow is nearly over and the crop is being extracted. Some is already in tanks ready for market. Estimates vary as to the yield. Some think the crop is about 75 per cent of normal; others estimate a production of nearly 20,000 cases compared with last year's light yield of around 17,000 cases. Lack of April rains and the present unusually warm weather have lessened sage prospects. Button sage continues to yield lightly, and white sage is starting to bloom in some sections. Black sage is reported blooming profusely in San Diego County, and white sage is budding well. Wild alfalfa and horehound are also in bloom. Although in a few districts bees are still being fed, in others beekeepers are preparing to extract the first honey of the season. Swarming has been unusually heavy, increasing the number of colonies in the county appreciably. Little honey sold recently. Ton lot light amber sage reported sold at 6c per lb., and jobbers are offering 5-6c per lb. for light to extra light amber. Some beekeepers are endeavoring to establish a price of 8½c per lb. for orange honey. Beeswax quoted from 33c to 38c per lb. Northern California—Cloudy or wet cold weather has given bees very few days on which to work, and in consequence the spring flow from mustard, lemons, etc., has been small. Little honey reported sold. Few small pails light amber and star thistle moved at 9½-10c per lb. Beeswax has sold at 32½-33c per lb.

PACIFIC NORTHWEST.—Although spring is several weeks late, prospects are good for a honey crop. Bees are breeding up very well. Some nectar is being gathered from fruit blooms and dandelion. Stocks of honey are beginning to lessen and movement is better. The following sales are reported. Extracted: White alfalfa, 13c per lb. in small pails; 7-8c per lb. in ton lots; light amber alfalfa, 11c per lb. in small pails; comb, white, $3.50-4.50 per case. Beeswax sold at 35-40c per lb. for yellow.

INTERMOUNTAIN REGION.—The season is at least two weeks late in much of this territory. Practically no honey has been stored yet this year. Even where fruit bloom, dandelion, etc., are sufficiently advanced for nectar and pollen to be available the bees have worked on them very little, due both to weakness of the colonies and frequent cold, wet days. Reports of winter losses continue variable, ranging from practically no loss to 50 per cent. The long winter, with stretches of mild weather, together with late spring, has caused unusually heavy consumption of stores, and many colonies have starved. Bees are building up slowly and there will be very little early swarming. Feeding must be continued in many sections. In the northern part of this region alfalfa is reported winter-killed in spots. Sweet clover is coming out very slowly. Demand for honey is slow, especially for extracted. Much extracted remains unsold, although some sections are well cleaned up. Holders usually ask 7c per lb. or better for white sweet clover and alfalfa in car lots, with dealers reported offering 6c or less per lb. Recent sales of white sweet clover and alfalfa extracted have been reported at 5½c per lb. for car lot; 7½-8½c per lb. for 60s, and 10c per lb. in small pails. No. 1 white comb brought $3.50 per case in a small way, and beeswax sold at 30c per lb.

TEXAS.—Colonies are reported strong in east Texas. The flow from the holly trees was a failure, due to weather conditions. The prospects for the basswood flow are not promising. Recent pleasant weather in northeast Texas has permitted the bees to begin to store a surplus from huckleberries and other early plants. Many beekeepers do not take off the early flow on account of its inferior quality, but use it for building up the colonies. Swarming has started. Rainfall has been spotted in south central Texas and some sections are suffering severely from drought. Many wild flowers are in bloom, including horsemint. Cotton is growing well now. Bees are in fairly good condition, but are storing little surplus. Very little activity is reported in southeastern and south Texas. In parts of the southeast a small caterpillar has appeared which destroyed the blossoms of the rattan vine, the main source of early honey. Rain is badly needed, as it has been extremely dry. Brood-rearing has closed entirely in some places. Demand for queens is very limited. Few sales reported as follows: Extracted, light amber in 60s, 8-10c per lb., in small pails, 10-13c per lb.; bulk comb, light amber to white, 13-15c per lb. in 5-lb. pails, and other sizes in proportion.

PLAINS AREA.—Cool, cloudy or rainy weather during most of the period curtailed bee activities. Colonies, however, are unusually strong and have generally gathered enough to live on where dandelion, willow, fruit bloom and other sources were available. Spray poisoning reported serious in some fruit territory. White clover and yellow sweet clover are starting to blossom in the southern part of this area. Clover plants look well, though late. Swarming is expected soon. Little old comb honey remains unsold, and supplies of extracted are light in most districts. Demand is slow and few sales reported. The market price for clovers ranges 7¾-9½c per lb.; Spanish needles, 8½c per lb. Beeswax has sold: yellow, 37½c per lb.; average grade around 33c per lb.

EAST CENTRAL AND NORTH CENTRAL STATES.—Dandelion and fruits will soon be in bloom generally. Bees are now working on them in the southern part of the section, where colonies are strong and swarming has started. Further north cool, rainy weather has made feeding necessary in many cases in order to maintain colony strength. Winter losses and spring dwindling reported heavier than previously anticipated, chiefly from beekeepers who have not given the bees adequate care. Much extracted honey remains unsold in Wisconsin and Michigan, but Ohio beekeepers report stocks generally light. Except where individual efforts have increased local interest, the honey market is dull, and prices are so low that apathy among beekeepers is frequent. Ton lots of white clover honey reported sold at 9-10c per lb.; 60s, 10-11c; small pails, 12-14c per lb.; few sales amber baking honey, 6½c per lb. White comb honey is very scarce; few sales No. 1 reported at $6.50 per case. Beeswax, 38-41c per lb.

NORTHEASTERN STATES. — Brooding-up has been retarded by the cold, cloudy or stormy weather, but many beekeepers have fed, and spring dwindling has not generally been serious. Bees are now working on hard maple and willow; are starting on dandelion and fruit bloom, and are reported to be in good condition. Clovers look well, and an unusual nectar flow is anticipated. Demand for honey reported a little better in some sections, but supplies are very light, and little has been sold recently. Few sales white to light amber clover reported, ton lot, 8½c; 60s, 10c; small pails, 15c; buckwheat, 60s, 9-10c; small pails, 11-12c per lb. Beeswax sold at 36-44c per lb., according to color.

SOUTHEASTERN STATES.—Few sales reported. Some tupelo reported moved in barrels at 10c per lb.; small pails light amber extracted, 10-13c per lb. Beeswax ranged 30-37c per lb., according to condition.

From Producers' Association

Our domestic markets have held up very well during the month of April and have also been very good the first week in May. Export markets are still inactive and prices very low.

The Ontario Honey Producers' Co-op., Ltd.,
A. G. Halstead, Gen. Mgr.

Honey Producers Report

Early in May we sent the following questions to actual honey producers:

1. At what price has honey been sold, or contracted for, in large lots (state whether carload or less) in your locality during the past month for (a) extracted honey, per pound? (b) comb honey, fancy and No. 1, per case?
2. What are prices when sold to grocers in case lots for (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) comb honey, fancy and No. 1, per case?
3. What is the retail price to consumers in your locality of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) comb honey, fancy and No. 1, per section?
4. How is honey now moving on the market in your locality. Give answer in one word, as slow, fair or rapid.
5. How does the number of colonies in your locality that are in condition to store surplus honey this season compare with the number of such colonies last year? Give answer in per cent.
6. What is your estimate of the condition of the colonies at this time as compared with normal? Give answer in per cent.
7. What is your estimate of the condition of the honey plants at this time as compared with normal? Give answer in per cent.
8. How does the early honey flow, if any, thus far compare with normal? Give answer in per cent.

The following answers were received:

State.	Name.	Large lots. Ex.	Large lots. Comb.	To grocers. Ex.	To grocers. Comb.	Retail. Ex.	Retail. Comb.	Movement.	No. of Col.	Con. Col.	Plant Con.	Ear. Flow.
Ala.	J. M. Cutts	..	..	..	..	$.80	..	Fair	100	95	80	75
Ark.	J. V. Ormond	..	..	..	..	..	..	..	100	100	100	..
Cal.	L. L. Andrews	..	..	.75	..	1.00	.28	..	150	100	100	80
Cal.	M. H. Mendleson	..	..	1.17	5.25	..	5.50	Fair	..	..	50	100
Cal.	M. A. Saylor	.07½	3.75	.60	4.00	.75	.25	Fair	100	100	100	100
Col.	J. A. Green	..	..	.65	..	.95	.20	Fair	105	100	100	100
Col.	B. W. Hopper	.07	..	.60	4.00	.75	.20	Fair	100	100	100	75
Conn.	Allen Latham	..	..	1.05	6.75	1.30	.40	Fair	100	75	100	..
Conn.	A. W. Yates	..	..	1.00	7.00	1.30	.40	Slow	75	90	100	..
Fla.	C. C. Cook	..	..	.83	..	1.10	..	Slow	75	75	60	60
Fla.	Harry Hewitt	..	..	.85	..	1.15	..	Slow	100	100	100	120
Ga.	J. J. Wilder	.09	..	.84	..	1.00	..	Fair	100	100	100	90
Ida.	J. E. Miller	.06	..	.55	..	.75	..	Fair	100	100	100	100
Ill.	C. F. Bender	..	..	..	5.50	..	.25	..	90	100	125	90
Ill.	A. L. Kildow	..	..	..	..	.85	.20	Slow	85	100	100	..
Ind.	T. C. Johnson	..	..	.80	4.80	1.00	.25	Slow	100	100	100	..
Ind.	E. S. Miller	..	..	.90	4.80	1.10	.25	Slow	95	95	100	..
Ind.	Jay Smith	..	..	..	..	1.25	.35	Fair	100	75	125	..
Ia.	E. G. Brown	..	..	.70	4.00	.90	.25	Fair	125	110	110	0
Ia.	F. Coverdale	..	..	.75	4.00	1.00	.20	Fair	100	90	95	0
Ia.	W. S. Pangburn	..	..	..	..	..	..	Fair	90	75	100	..
Kan.	Frank Hill	.09½	..	.75	..	1.00	.25	Slow	100	110	110	110
La.	E. C. Davis	.08	..	.60	..	.90	..	Slow	100	100	100	50
Me.	O. B. Griffin	..	..	1.25	7.00	1.50	.37	Fair	..	..	100	110
Md.	S. G. Crocker	..	..	1.25	5.50	1.50	.30	Slow	..	..	100	95
Mass.	B. N. Gates	..	..	..	..	..	..	Slow	90	90	90	..
Mich.	Floyd Markham	..	..	.80	..	1.00	..	Slow	90	100	100	50
Mich.	E. D. Townsend	.09	..	..	..	..	..	Slow	100	110	90	..
Mich.	I. D. Bartlett	..	..	.70	..	1.00	.25	Fair	100	110	100	..
Mo.	J. H. Fisbeck	..	..	1.00	..	1.25	..	Slow	150	100	125	..
Mo.	J. M. Romberger	..	..	.70	4.50	.95	.23	Slow	75	75	100	..
Neb.	J. H. Wagner	.09½	..	.65	..	.90	..	Fair	100	95	105	100
N.J.	E. G. Carr	..	..	..	..	1.25	.55	Slow	100	90	70	0
N.Y.	N. L. Stevens	.08½	..	.80	..	1.00	..	Fair	100	100	100	..
N.Y.	Geo. B. Howe	..	..	.75	..	1.00	.33	Fair	75	75	100	0
N.Y.	Adams & Myers	..	..	..	..	1.00	.25	Slow	100	85	60	100
N.Y.	F. W. Lesser	.10	..	..	..	.75	.28	Slow	90	90	100	100
N.C.	Sams, C. L.	..	..	1.00	4.80	1.25	.30	Fair	105	100	95	90
N.C.	W. J. Martin	.10	..	1.00	4.00	1.25	.30	Fair	90	100	90	90
N.C.	C. S. Baumgarner	..	..	1.00	..	1.35	.30	Fair	100	100	110	90
Ohio.	R. D. Hiatt	..	..	1.05	5.50	1.35	.35	Fair	85	100	90	90
Ohio.	J. F. Moore	..	..	.80	..	1.00	.30	Slow	100	100	100	80
Ohio.	F. Leininger	.10	4.80	1.00	..	..	..	Fair	100	95	90	100
Okla.	Jos. Heueisen	..	..	..	..	..	..	Fair	100	70	80	50
Okla.	C. F. Stiles	..	..	.80	4.50	1.00	.25	Slow	100	90	100	50
Ore.	H. A. Scullen	..	..	.75	..	.95	.25	Slow	100	90	100	100
Pa.	Harry Beaver	..	..	.60	..	.70	..	Slow	90	85	100	..
Pa.	D. C. Gilham	..	..	1.10	7.20	1.50	.40	Fair	100	100	90	..
S.C.	E. S. Prevost	..	..	.75	..	1.00	..	Slow	100	100	100	100
Tenn.	J. M. Buchanan	..	..	..	..	1.25	..	Slow	125	100	100	100
Tex.	H. B. Parks	.07	..	.60	..	.75	..	Fair	100	100	30	60
Tex.	T. A. Bowden	..	..	.65	..	.90	..	Slow	100	100	40	40
Tex.	J. N. Mayes	.08½	..	.45	..	.63	..	Slow	100	85	40	40
Utah.	M. A. Gill	.06½	..	.45	..	.50	..	Slow	80	75	80	75
Vt.	J. E. Crane	..	..	1.00	..	1.25	..	..	90	95	80	100
Va.	T. C. Asher	..	..	.85	5.50	1.00	.30	Fair	90	90	80	50
Va.	L. N. Gravely	..	..	..	..	1.25	.33	Rapid	70	50	60	30
Wash.	W. L. Cox	..	..	..	..	..	..	Fair	90	80	85	50
Wash.	G. W. B. Saxton	.09½	..	.65	4.50	.75	.25	Slow	100	100	100	100
W.Va.	T. K. Massie	..	..	1.20	3.50	.90	.25	Slow	60	70	50	10
Wis.	N. E. France	..	..	.78	4.75	1.20	.25	Slow	90	85	110	..
Wis.	E. Hassinger	..	..	.75	..	.95	..	Fair	98	100	100	..
Wis.	H. F. Wilson	.09½	..	.60	..	.87	..	Fair	100	95	100	..
Wyo.	A. D. Brown	.07	..	..	..	.50	..	Slow	100	95	95	..

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2-pound with untested queen	$3.60	$33.50	$160.00	$310.00
3-pound with untested queen	4.50	42.50	205.00	400.00
4-pound with untested queen	5.40	51.50	250.00	490.00

Combless or with stores on comb as desired.

Guarantee safe arrival, subject to notation on express bad-order delivery receipt. Shipments to Canada furnished with all necessary papers. Safe arrival guaranteed in Ontario only.

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	1 to 3.	4 to 9.	10 to 49.	50 to 99.	100 or more.
Untested queen	$1.00 ea.	$0.90 ea.	$0.85 ea.	$0.80 ea.	$0.75 ea.
Selected untested	1.25 ea.	1.15 ea.	1.10 ea.	1.05 ea.	1.00 ea.

Safe arrival guaranteed.

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With reference to our ability to deliver bees to you in A-1 condition, ask any Express Company regarding the number of claims put in by us. Special constructed packages and feeders do the work. Write for folder containing prices and much information.

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1. Cost of wiring
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3. Cost of wire

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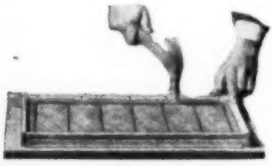
1. It saves you the cost of wiring and embedding
2. It puts up quickly and much more cheaply
3. It gives the bees more wax to the sheet



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GLEANINGS IN BEE CULTURE

JUNE, 1927

OUR CORNERSTONE

REMEMBER at all times that improved bee culture is our end and aim, and we trust no one will hesitate to give any facts from experience because they may tend to overthrow any particular person or "hobby." If any of our special plans don't work, or if anything we advertise has had its value overestimated, here in these pages is the place of all others to set the error right.—From A. I. Root's "Introductory" in the first issue of Gleanings in Bee Culture, January 1, 1873.

REPORTS received from various parts of the country indicate that both bees and honey plants are in better condition this spring than they have been for several years. Prospects are especially good in the white clover and alsike clover region where beekeepers are expecting a bumper crop this season if the weather conditions are at all favorable during June. In some portions of the South, where the early crop has already been harvested, the yield has been normal or above; but in Texas and in portions of California reports indicate that beekeepers are disappointed in the amount of honey secured thus far. In the inter-mountain region where irrigation is depended upon to supply moisture for the farm crops, there is apparently an abundance of snow in the mountains to supply sufficient water for agriculture, which in turn means well-watered honey plants. In portions of the sweet-clover region conditions are not so promising as last year.

Honey Crop Prospects

MANY beekeepers in Mississippi and Louisiana have lost not only all their bees, but their homes also, by high water. Some saved their colonies by building platforms for them, raising the hives above the water level, as described by Mr. Davis on page 379 in this issue. Several shippers of package bees and nuclei have lost all their colonies and will not be able to fill orders on hand from their own apiaries, but can no doubt purchase from others located on higher ground. Many have expressed a desire to contribute toward re-establishing those who have lost their bees and equipment if some arrangement can be made for doing so. On account of the large number of sufferers and the difficulty of obtaining information as to where help is most needed, it will probably be best for all contributions to be turned over to the Red Cross, which is doing such excellent work in the devastated region.

Many Bees Lost in Flood

BEES have wintered so well throughout the greater portion of the country that there has been considerable swarming during fruit bloom, and some even previous to fruit bloom. While even a small percentage of such early swarming is quite a nuisance, it has afforded an opportunity to produce early queens with but little extra work. Those who took advantage of this opportunity to gather queen-cells from colonies of good stock, and form nuclei to take care of them, now have a good supply of young laying queens. These will come in handy during the honey flow in bringing back to good working condition colonies that attempt to swarm during the honey flow. In fact, in regions where there is considerable trouble from swarming one of the most important steps in swarm-control is that of making provision to have on hand during the swarming- season a large number of young laying queens in nuclei ready to be given to any colony when needed. It certainly brings a comfortable feeling to have on hand a good supply of young laying queens during the honey flow. It frequently happens that the quickest way to bring a colony back to normal so far as its spirit of work is concerned is to introduce a young laying queen. Since sweet clover is spreading over more and more territory, thus increasing the duration of the honey flow, the dequeening and requeening method for swarm-control is coming into greater use every year, especially in extracted-honey production; and the replacing of inferior queens or queens that show signs of failing during the honey flow often

Value of Young Queens During Swarming Season

works like magic in greatly increasing the energy with which a lagging colony will work in the supers.

Brood-Rearing Confined to Food-Chamber

OCCASIONAL reports are still being received to the effect that when food-chambers are left on the hive during the winter the queen sometimes confines her work to a small brood-nest in the food-chamber, neglecting the brood combs in the lower story. If the shallow extracting super is used as a food-chamber and was properly filled with honey last season, there is so little room for brood-rearing in the food-chamber that a colony which confines brood-rearing to these shallow frames does not build up in a normal manner. If a full-depth hive-body is used as a food-chamber there is but little if any more room for brood-rearing in it, provided it was completely filled with honey the previous season. This is sometimes mentioned as an objection to wintering colonies in two stories.

However, this is a difficulty that is easily overcome in most localities. It is usually a result of poor wintering. Well-wintered colonies that are of normal strength in the spring do not confine brood-rearing to the upper story in this way. If such colonies happen to start brood-rearing in the food-chamber early in the spring, it is expanded into the lower story as rapidly as it is safe to expand the brood-nest, provided the combs of the brood-chamber are of worker cells to the top-bars of the frames. In most localities no trouble of this kind has been experienced this season because the bees have wintered better than usual. In some localities, especially those having a fall honey flow of such a character that the bees are worn out rapidly, it is extremely difficult to have colonies of normal strength at the beginning of winter. Wintering these small colonies in two stories may result in restricting brood-rearing to the upper story for some time in the spring, thus checking the development of the colony. In most localities, however, such trouble is easily overcome by providing conditions more favorable to good wintering.

Best Method of Swarm-Control

THERE seems to be no limit in the variations in swarm-control methods. The beginner who makes a study of the literature relating to this subject must at first be utterly confused by the enormous number of plans that have been worked out to control swarming. However, a study of the various methods that have been worked out reveals the fact that practically all of them are based upon a comparatively few principles. In fact, practically every swarm-control method is in the last analysis some variation of one or the other of two basic methods, namely, creating conditions comparable to a natural swarm, or creating conditions comparable to the parent colony. Stated another way, practically every swarm-control measure is either some form of artificial swarming or some variation of the method of removing the queen, destroying all queen-cells, then ten days later again destroying all queen-cells and introducing a young laying queen. Sometimes the old queen is given back to the colony after having been taken away for an interval of ten days or more, and sometimes the queen is not taken away entirely but is caged within the hive or separated from the brood by means of an excluder. Reduced to the simplest form, we have on the one hand some variation of what has been termed "shook" swarming, and on the other some variation of the dequeening and requeening plan.

Of these two general plans, one may give better results under some conditions, while the other may give better results under other conditions. When swarming occurs at the beginning of a short rapid honey flow some variation of the artificial-swarm method usually brings excellent results provided the bees accept the situation and are satisfied instead of attempting to swarm out after the manipulation. This method was widely used in comb-honey production in the days when basswood was a greater factor as a honey plant than at the present time. Artificial swarms made just previous to the beginning of the basswood honey flow frequently produced more surplus than colonies of like strength that went through the season without attempting to swarm. On the other hand, making an artificial swarm soon after the beginning of a long honey flow, as from sweet clover, may result in very poor work during the latter part of the honey flow on account of the decreasing strength until brood begins to emerge three weeks after the artificial swarm was made. Under such conditions, taking out the queen, destroying all queen-cells, then ten days later again destroying all queen-cells and introducing a young laying queen bring much better results. If the artificial swarm method is used for a long honey flow, it is sometimes advantageous to reunite the parent colony and the swarm after the young queen in the parent colony begins to lay, the old queen being killed or taken away.

IN his article beginning on page 368 in this issue, Jay Smith makes a careful analysis of the factors which contribute to swarming. He points out five different conditions, each of which may be a strong factor in bringing on the swarming-impulse. The Editor believes that the first factor mentioned by Mr. Smith, namely, the brood-nest being packed with bees, is the real cause of swarming, and that the other factors are contributory causes. In fact, so far as the Editor is concerned, this is an established fact so far as normal swarming is concerned. It is the one factor that is always present in all normal swarming. It does not apply, of course, to swarming resulting from supersedure, after-swarming, or swarming out from hunger or because of American foul brood. Whether the hive is large or small, whether the colony is weak or strong, whether the queen is two years old or two weeks old, whether the colony has much brood or little brood, whether it has an abundance of stores or none, whether nectar is coming in freely or not, the one thing that is always present is the congestion of bees within the brood-nest, bringing to the colony a feeling of strength or a need for division or expansion.

The Cause of Swarming

This congestion is not necessarily a matter of strength of the colony. It may be brought about in weak and medium-sized colonies which confine their work to the brood-chamber, leaving the supers and remote brood combs vacant and crowding the queen by surrounding the brood-nest with honey. In such cases the congestion is as real and as potent in bringing on swarming as if the colony had twenty times as many bees. The remedy here is stronger colonies that will expand their work into the supers readily, or a strain of bees less inclined to crowd the queen in this manner.

The congestion may be brought about by an abnormally large percentage of bees too young to work in the field, and which are inclined to stay in the brood-nest instead of in the supers. The swarming-season usually occurs at about the time the colonies have the largest proportion of young bees as a result of extensive spring brood-rearing.

Congestion of the brood-nest is a matter of distribution, since the hive can be expanded to accommodate even the strongest of colonies without congestion. But the bees must be induced to expand into the supers as the hive is expanded. If most of the bees can be induced to leave the brood-nest, going either into the supers or into the field, there should be no trouble from swarming. On the other hand, when young bees are emerging rapidly and conditions are such that the colony does not expand into the supers rapidly enough to relieve the brood-nest, conditions are favorable for swarming. If, added to this, the weather conditions or honey flow are such that field bees are compelled to stay in the hive during the heat of the day, or the field work is slowed down from some other cause, some swarming is sure to result.

The contributing factors relating to the prosperity of the colony, of course, have their influence, but their presence is not always necessary to bring about swarming if the congestion of the brood-nest is great. Many normal prime swarms have been known to issue when the hive contained but little brood. Early in May this year many colonies in northern Ohio swarmed when there was scarcely a pound of honey left in the hive, and after having been confined to their hives without gathering a drop of nectar for ten days or two weeks on account of the cold weather. These colonies became so crowded that they swarmed in spite of the fact that no nectar was available and that the hives were practically depleted of honey. Colonies may swarm even when the nurse bees are not secreting larval food to any extent if the brood-nest is badly congested. The Editor has brought on swarming in scores of recently hived swarms having only a small amount of brood by adding several pounds of young bees taken from parent colonies having only sealed brood. These young bees were not secreting larval food. One season the Editor made up a number of colonies entirely of old bees to test out the tendency to swarm in such colonies. This was during a heavy honey flow from clover, but there was no nectar in the flowers until nearly noon and the field bees remained in the hive during the hot forenoons. The result was that many of these colonies cast normal prime swarms in spite of the fact that they were made up of old bees which apparently secrete larval food with difficulty. The congestion brought about by the field bees crowding the brood-nest was sufficient to overcome the lack of well-fed nurse bees secreting large amounts of larval food.

In this connection it is well known that when colonies reach the swarming-pitch previous to the main honey flow the tendency to swarm usually disappears almost entirely on the advent of a heavy honey flow lasting during the entire day, because the brood-nest is so relieved of field bees during the day that the colonies devote their energy to gathering and storing, and apparently forget all about swarming.

MARKETING HONEY IN A NEW FORM

By H. H. Root

Extracted Honey That is Neither Solid Nor Liquid, and That is More Convenient Than Either

A disinterested expert making a study of honey marketing would probably call attention to the fact that honey is often sold under the same name or brand in a variety of flavors, colors, densities, and consistencies. Liquid honey is not permanent in form: it granulates in time, and, if exposed to light, gradually darkens.

Bulk comb honey (cut comb honey with liquid honey poured over it) is the least permanent. After it is packed, the quicker it is sold and consumed the better. The liquid honey that is poured over the comb can not be heated very hot because of the danger of melting the comb, and on account of this, granulation shows in a comparatively short time.

Section comb honey granulates ultimately. There is no more discouraging problem confronting the honey-buyer than that of disposing of comb honey that is partially or fully granulated. Usually he must sell it considerably below the price he paid for it. Moreover, the consumer is suspicious of it, thinking it manufactured.

Disadvantages of Heating

With modern methods of clarifying honey, liquid honey may be packed in glass with fair assurance that it will remain liquid for at least a year—sometimes two years or longer. Ultimately it becomes partially granulated. However, because it was probably heated to 160° F. at the time it was packed, it rarely granulates solid, and the crystals are apt to be coarse and in streaks. Because the appearance of such honey is uninviting, the selling value is greatly lowered. What is worse, the buyer, with his shelf filled with unsalable honey, does not care to buy fresh stocks. The lack of uniformity and permanence has interfered more seriously in the marketing of honey than we realize.

Canadian producers have repeatedly told us that we are proceeding along the wrong lines; that we are educating the American public into the needless and foolish habit of demanding liquid honey. For years they have marketed a large proportion of their honey in the granulated form. There is much truth in what our Canadian friends have been telling us. The heating, straining, and clarifying, so necessary to delay granulation, are expensive, and yet we put before the public a product that *looks* no better than the cheapest syrup. There is one drawback to marketing honey in the granulated form—such honey is not uniform. Granulated honey from the same source, extracted at the same time, and handled in the same way, shows a different consistency when packed in pails and cans. Some is hard, with a fine-grained consistency. Some in other cans in the same lot may be soft and mushy, even when stored for the same time in the same place.

According to A. B. Anderson, of Marathon, Texas, the size of the can has a great bearing on granulation. The smaller the can, the sooner the honey granulates. The explanation for this probably lies in the fact that the smaller can, having a proportionately greater surface exposed, changes in temperature more rapidly, and the imperceptible circulation thus brought about hastens granulation. If this is the explanation, it probably explains also why some honey in the same lot will granulate quicker and harder than the rest. Undoubtedly some cans are stored where there is a greater exposure to the air of the room, and if the room temperature is fluctuating the honey that has the greatest exposure will have the greatest imperceptible circulation.

Another explanation is that honey from the same source is stored in different combs. One lot of supers may contain combs having old honey that already shows some granulation. It is reasonable to suppose that honey extracted from such combs will granulate more quickly than honey that is all new.

Cream of Honey

For more than ten years we have marketed, in a small way, what we call Cream of Honey. It is really creamed granulated honey. This product must not be confused in any way with that obtained by beating or whipping liquid honey. With a simple egg beater, liquid honey may be beaten into a creamy mass, delightfully smooth and almost pure white. However, at ordinary living-room temperature the air will all rise to the top in two or three weeks' time, leaving the clear honey below and a thick white layer of "foam" at the top.

Our Cream of Honey was made by creaming honey that was granulated solid. This process breaks up the arrangement of the crystals and the product remains soft and creamy for years. The explanation probably is that each tiny crystal of dextrose is surrounded by levulose. The dextrose particles are prevented from coming in contact with each other, therefore the honey never gets hard again. We have had samples of

Cream of Honey stored in different places for ten years, which seemed to be just as good in every way as the freshly made product except that it was stiffer.

A New Process

Originally we creamed this granulated honey by forcing it through rollers especially made for grinding chocolate. This was a large, elaborate machine, and the process was expensive. We have recently discovered that a superior product can be made by grinding granulated honey in a meal or flour grinder, provided the adjustment and the speed of the machine are right. We do not know whether all flour mills could be so used: we do know that some of them can.

Temperature that will liquefy granulated honey will liquefy creamed granulated honey. Ordinary living-room temperatures do not effect it. If left in the hot sun, it may partially liquefy in time. Extreme cold makes the product stiff but not hard; and, so far as we know, it never assumes the hard state like the original granulated honey. After standing a few days, some of the air rises to the top, the honey beneath appearing as cream-colored instead of pure white; but this is not an objectionable feature.

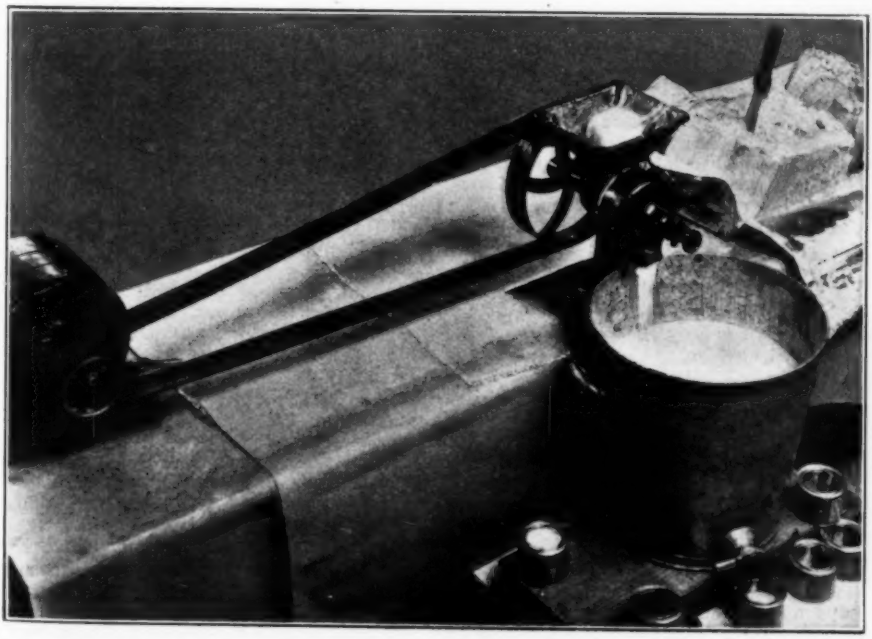
This new process is available to any one. The equipment for grinding is simple. The Cream of Honey may be run direct from the mill into a filling-can, and from that into paper tubs, tin cans, pails, or even into glass, if one wishes to market it in that way.

Of course, the market must be educated. The housewife will not buy what she does not understand, but once she learns that honey is obtainable in this new form she will prefer it. It is pure honey with nothing added. It is far less sticky for children and more convenient. It is permanent. It is a splendid cake-filler, fine for sandwiches.

In packing liquid honey that is very thick and heavy the problem of straining and clarifying is serious. Elimination of the air is important to improve the appearance and delay granulation, hence the growing use of settling-tanks in which the honey may stand several days to clarify. Further air is driven off by heating to 160° F. The color, however, is slightly darkened, and the flavor changed a little when the honey is heated, unless it can be almost instantly cooled.

If a sixty-pound can of honey is kept warm (even no hotter than 140° F.) for thirty days and a sample of this honey removed each day, it will be found that the samples range in color from white to amber, each day's sample being slightly darker than that of the day before.

Heating honey, while useful for clarifying, does not improve either flavor or color. This is probably why many prefer comb honey or granulated extracted honey. But comb honey deteriorates on



Granulated honey is put through a small meal or flour grinder. The result is a beautiful white creamy product that remains in the same condition for several years.

standing, for it granulates ultimately, as has already been pointed out. Creamed honey does not have to be heated. It retains all the flavor of the virgin honey fresh from the combs. The straining process is greatly simplified, for all that is necessary is a screen of coarse-mesh wire cloth to remove larger particles. Minute particles of wax or pollen and bubbles of air do no harm. When the honey is granulated in large tanks, it is easy to cut out slabs and run them through the mill into the final packages.

Since the honey has to be granulated, how is the average producer to find tank capacity enough for his whole crop? The honey, as soon as it runs through the coarse strainer, may go directly into sixty-pound cans to be stored until it granulates. Used cans are inexpensive and are just as good for storage purposes. When the honey is granulated the tin may be quickly cut away, exposing the big cake of granulated honey, ready for grinding. The cans cost less than large tanks and they are more convenient. Or open-top cans, larger at the top than at the bottom, may be used year after year. If such a can of honey is set into hot water for a few moments and then overturned, the honey will slip out en masse.

By means of the creaming process we have honey in a form that comes the nearest to being uniform and permanent of any yet discovered, and it retains the original delicate flavor it had when it first came from the combs.

I do not hesitate to predict that, if beekeepers adopt this new process and educate their markets to using honey in this more convenient form, a far larger proportion of women will become steady users of honey. At present the majority of those who use honey buy it only at rare intervals, perhaps when they see some new white sections in a grocery. If those who buy would buy regularly, the per capita consumption of honey would be ten or twenty times the estimated two pounds per capita now consumed. If a hundred women who do not use honey are questioned as to their reasons, ninety-five per cent will say, "Too sticky." Creamed honey is less "sticky" and far more convenient to handle. It spreads more easily than butter, and is uniform and permanent besides.

NECTAR NOT ALL FROM FLOWERS

By J. K. Wilson
Professor of Soil Bacteriology, Cornell University

Fluids Given Off by Plants Through "Safety Valves" When Internal Pressure is High

The term nectar is used by beekeepers everywhere, yet it is doubtful if it conveys the same idea to every one. It has been variously defined as the beverage of the gods, or as a fluid always sapid, usually sweet, often odorous, which is elaborated in any part of a plant, remaining where formed or making its way to some other part, its reason for existence being the necessity for the removal of some useless or injurious substance, or for some provision to attract nectar-loving animals to the plant for some definite purpose. These definitions are broad enough on one hand to suit the fancy of any god, and on the other the fastidiousness of any naturalist. Somewhere between these two rather extreme definitions lies the ordinary conception of the word, and when it is used one immediately associates it with a flower that is filled with a sweet liquid.

If the latter definition is accepted it will include all plant secretions and excretions, whether from nectaries or otherwise, that may be collected by insects for the sugars they contain. While perhaps most nectar is secreted by special organs—nectar-glands—there are also excretions from modified stomata which may be collected with avidity by ants and bees, and which should perhaps be classed as nectar or at least as "plant honeydew."

Many plants have their nectar-glands within the flower only. White clover is an illustration of this. Others have them only on parts other than the flowers as is the case with cassia (Fig. 2), while still others, for example cotton (Fig. 5), may have them in both places. Thus they may occur as modifications or appendages of any floral organ and may be floral or extra-floral, according to their situation. Extra-floral nectaries may be found on the calyx, or ordinary bracts, or involucre, or peduncle, or leaf. This variability in the situation of active nectar-glands has possibly added to the confusion that already existed as to what should be included in the term nectar.

Excretion Result of Internal Pressure

The excretion from modified stomata may also be a nectarlike liquid, and one that at times is quite sweet. This excretion is the result of internal pressure forcing the plant-sap, with its dissolved sugars and salts, outward so that it collects as drops over these openings. Sometimes the excreting force is so great and

continued so long that drops fall. Nearly all plants, either while young or if placed under proper conditions, may excrete such a nectarlike liquid. Whenever the internal pressure of the plant, caused by

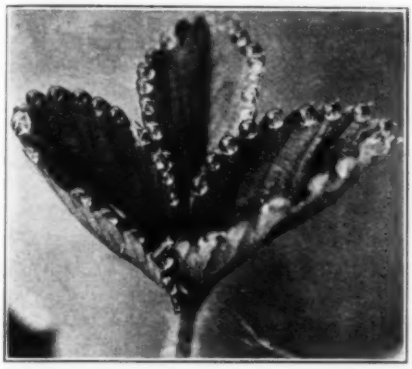


Fig. 1.—Excreted water on strawberry leaf. This rather young leaf is fringed with pearly drops of excreted water. Such drops may be collected on leaf surfaces and concentrated by evaporation to a point where the sugars they contain may attract insects.

active absorption of water and accompanied by forced filtration, is greater than the reduction force of transpiration, excreted liquids may appear. This condition is more likely to occur after warm rains, especially during the evening, night, or early morning, than at any other time.

Corn, oats, and wheat seedlings that are just coming through the ground may excrete drops that are quite rich in sugars. The endosperm of the grain at this period is being digested rapidly. The starch is being converted into sugar and possibly other substances faster than the growing seedling can use them. With the rapid absorption of water and the forced filtration, some of these dissolved substances are carried out through the sur-

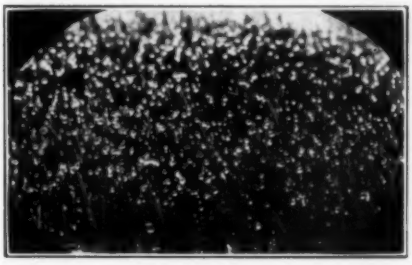


Fig. 3.—Excreted water on timothy seedlings. Such droplets soon concentrate and if not blown off by the wind will leave a white residue on the top of each blade. It contains sugar and other solid matter.

face openings—modified stomata—which are located at the periphery of the blades or leaves. It often collects in large drops and can be readily seen. Sometimes this

Fig. 2.—Nectar on cassia. Near the base of each compound leaf one or more nectaries develop. They secrete long before the plant shows signs of bloom as well as when in full bloom. The blossom has no nectar in it at any time. Because of these facts one is not liable to look upon this liquid as nectar.

liquid is quite turbid and may actually taste sweet.

The amount and chemical composition of this sapid liquid that is excreted from modified stomata varies considerably. As many as 85 drops per minute have been seen to fall from the leaf tip of *Colocasia esculenta*. The drops may come out with force enough to throw them five or six inches. Mr. Munting, 250 years ago, said that he had seen a fine stream of water like a fountain springing from the leaves of aroids. He probably was exaggerating, although it is not impossible that such might be the case if sufficient water were taken into the plant.

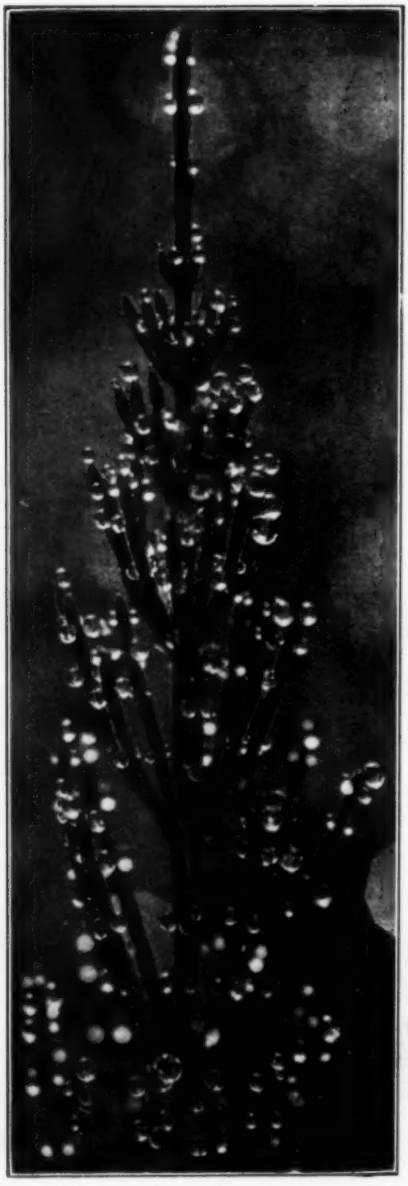


Fig. 4.—Excreted water on horsetail rush. These droplets of excreted water are quite similar in composition to the sap of the plant. They contain sugars, salts, and enzymes.

Fig. 5.—Nectar on cotton "squares." As the cotton bloom develops nectaries are formed at the base of the "squares." The nectar from these can be seen as "three bright eyes."

The excretion of water by plants is probably more common than the secretion of nectar, and it is in this connection that the beekeeper should be interested. It may be seen often on lawn grasses and on plants whose leaves or blades may be near the ground. It is quite regularly confused with dew by most persons. It may be seen on taller plants such as corn, oats, timothy, columbine, roses, bridal wreath, strawberries, sowthistle, buckwheat, and a great many other plants. It has been reported to drop from the immature leaves of the aspen, the maple, and certain other trees, as in the case of the so-called rain trees of the tropics. This excreted material soon becomes concentrated and produces a sweet liquid that probably should be called "plant honeydew"; as such, bees and ants col-

Fig. 6.—Excreted water on corn.

lect it with avidity. It is different from the honeydew that is produced by insects and should not be confused with it.

It might be interesting to record an observation of the writer in this connection. Near some bee colonies a few rows of popcorn were planted. It was doubtful whether the corn would germinate well, so an unusual number of kernels was planted. The corn gave nearly a perfect germination, and plants came up 8 to 10 for every foot in the row. Early one morning when the plantlets were from one-half to one inch high it was noted that the bees were going along these rows of corn. At first it was thought they were getting water from the ground, as they sometimes do early in the spring. On closer inspection, however, it was clearly evident that they were collecting this water of exudation from the corn plantlets.

Fig. 8.—Excreted water may be found on corn, where conditions are favorable, any time after it starts germination until tassel time. It may be at times quite sweet, and bees have been observed collecting it from seedlings.

Fig. 7.—This tomato plant is forcing its sap with dissolved sugars and salts out through the modified stomata.

Chemical Composition of Excretion

The composition of this excreted liquid will determine its usefulness to bees and other insects. It is quite similar, when first secreted, to the sap of the plant. But it rapidly becomes concentrated through evaporation and may eventually

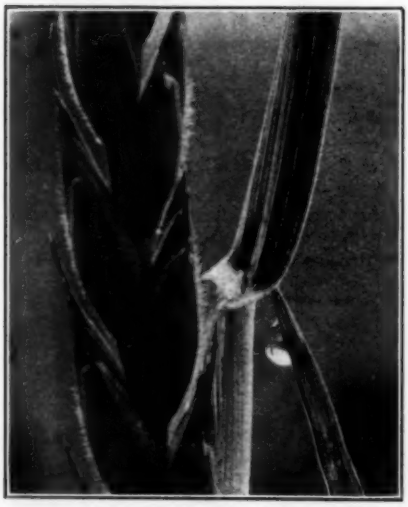


Fig. 9.—Excreted water on wheat.

leave on the plant either concentrated sugar solutions quite similar to nectar or a crystallized residue containing sugar. A chemical examination of the excreted liquid from corn and timothy showed both organic and inorganic substances. Of 1030 parts of solid material from corn, 750 were organic and 280 were inorganic. The inorganic materials were similar to those that may be found in the soil solution. Among these were nitrates, carbonates, chlorides, and sulphates. Among the organic substances numerous enzymes and several sugars were observed.

It should not be inferred, however, that all this excreted liquid may be gathered for the sugar it contains. It is only when it becomes concentrated that it contains enough sugar to attract insects. Probably in most cases insects pay no attention to it; but it would seem that favorable conditions might occur when considerable quantities are available, and it may be that some of the off-flavors of honey are due to substances accompanying sugars from this source.

It may be said, therefore, from the standpoint of differentiation, that true nectar comes from nectaries that are situated either in the flower or on some other part of the plant; that honeydew nectar may come from two sources—one from insects, known as insect honeydew, and the other from plants through modified stomata, the latter being called "plant honeydew." A study of the illustrations accompanying this article should soon make clear to one that nectar may come from a variety of sources in the plant.

Ithaca, N. Y.

BEEKEEPING IN SCOTLAND

By Dr. E. F. Phillips

Control of Brood Disease; Research Work; Character of Scottish People

There is now considerable discussion of *Nosema apis* as a serious pest of bees, a discussion which does not create much excitement in the mind of an American. We have *Nosema* over here well distributed, yet we have never been able to detect that it does any damage to well-kept colonies. In Switzerland, as well as in Great Britain, there are workers who are frightened at the progress which Nosema seems to be making, and it will take some further work to eliminate the differences in the points of view of the workers on the subject in different countries.

The brood diseases are also present in Scotland, but, just as in England, they seem not to be bothering the beekeepers much. Our friend Anderson believes that he has bees which will clean out American foul brood; but then we have a Lineburg on this side who claims the same thing. Both are good fellows, but that is no reason in my mind why I should accept what they say on this subject without considerably more proof. Since American foul brood is not especially prevalent, the disinfection of combs has not been extensively tried. There are still too many beekeepers in Great Britain who have faith in nostrums for the prevention of brood and adult diseases, a rather logical thing to try but not logical to continue in the face of universal failures in experimentation. Of course one can get testimonials for any of their drugs, just as was the case for patent medicines in this country years ago, before the fake medicines were so nicely curtailed by the Food and Drugs Act. There seems to be no law in Great Britain to prevent any one from advertising any sort of virtue for a remedy for bees, with the result that bee-journals often contain such advertisements—a good

thing for the publishers, perhaps, as it helps to foot the printing bills, but not so good for the beekeepers who trust the advertisements.

There is no apiary inspection in Scotland. On the merits and desirability of inspection, the best men are divided. Mr. Avery of Edinburgh is for and Anderson of Aberdeen is against it. Each has many followers. The question is not to be decided on whether inspection might help, but on the question as to who is to supervise it. This introduces again the sordid question of British beekeeping politics, about which I heard much but which I have no desire to enter.

Other Investigations

If we were to go years back in beekeeping, we should find that Scotland had done its share in beekeeping progress, for there were giants in those days. The first English translation of the work of Huber was made by a Scot and was published in Edinburgh. The work of de-Galieu was translated into English by Miss Sterling Graham, a woman of wealth and position in Edinburgh society, who must have been a person of great capabilities, if we may judge by another book which she wrote on the mystification of her friends by her superb mimicry of old women.

Recently Mr. P. Bruce White has issued an excellent work on the flora of the intestine of the adult bee, work undertaken in the search for the cause of the Isle of Wight disease, but not effective in that search, as we have seen. The bee-disease investigation at the University of Aberdeen is being continued in the hope that better remedies may be found for the Isle of Wight disease, and that some relief may be found for Nosema disease.

But one does not go to Scotland solely for bees or their diseases. The Highlands attract many tourists annually, and we were able to get into them in part, a trip never to be forgotten. We can provide hills as high in central New York as any

Left to right—Prof. J. Arthur Thomson, author of "The Outlines of Science," and professor of zoology, University of Aberdeen; Dr. E. F. Phillips; John Anderson, editor of The Scottish Beekeeper and lecturer on apiculture, University of Aberdeen.

Auld Brig O'Doon, Alloway, Ayr, Scotland, celebrated in Burns' poems.

in the Highlands of Scotland; but ours are in a young country, and we do not have tales of Rob Roy and other early worthies with which to embellish our scenery. Neither do we have better authenticated history to add interest to every step through our mountains.

The great national industry in Scotland is the telling of tales of the thrift or stinginess of the Scots themselves. They use these as advertising material, just as the Ford joke is the best advertisement for that car. Perhaps that is not the motive in telling these tales, but if the Scotch are as thrifty as they would make us believe, they must have devised this plan themselves. They may be thrifty folks, but they are terrible liars by omission. When they relate their thrift, they omit the fact that they are as hospitable and cordial a people as one will find in a year's journey, a characteristic quite out of keeping with their claims. I thought that we had people in the West who could draw a long bow, but in this the Scotch have them beat.

There are good beekeepers in Scotland and good beekeeping is increasing. The three colleges which do work in this field are making great strides in bringing better methods to the attention of the beekeepers; and since Nature favors them with wonderful stores of nectar we may look for great things from Scotland in the future of beekeeping.

We had troubles in France and Switzerland with the differences in languages, but it is almost as bad in Scotland, as we all know who have heard Scots talk. One can get on nicely enough when they talk bees, but when they begin reciting Burns' poems, as all of them do shortly after one meets them, a glossary of Scotch terms is handy to have about, unless one is willing to miss some of the most interesting things that they have to relate. I have a suspicion that they cultivate the Scotch idiom, just as they perpetuate the Scotch joke; but if they do, I for one do not blame them, for it is a beautiful modification of our common language. I am willing to bet that Anderson will reply to this that Scotch is the original tongue and that our English is a perverted mongrel; but since he is not a Scot himself but came from the Orkneys, I leave it to my readers to put him in his place.

The visit to Scotland ended our wonderful trip among the beekeepers of parts of Europe. It was hard to leave them, but after all, this is home, and we were glad to get back. If the trip which we took will in some small degree make us better acquainted with what our fellow workers on the other side are doing with their bees, and if it will further cement the friendship of the beekeepers on the two sides of the water, we shall be more than delighted and satisfied. We tried to tell them over there that the beekeepers of the United States are a good sort, and I can assure the readers of this tale that we met some of the finest people that we have ever met among the beekeepers of Switzerland, France, England, and Scotland. We are sorry that we could not visit other countries, but after we have recovered somewhat from the strain of making such a trip we hope to try another pilgrimage among beekeepers. Then we shall visit other countries, but surely it will be impossible to go to Europe without again visiting the beekeepers whom we met last summer.

Ithaca, N. Y.

CAUSES OF SWARMING

By Jay Smith

Several Factors Which Help to Bring About the Desire of Bees to Swarm

Swarm prevention and control constitute one of the problems of the beekeeper, and a practical solution has been much sought after. If we know why bees swarm, we may be better able to remove the cause. In the title to this article, I have used the word causes instead of cause, for I believe there are a number of reasons and that no one in itself will bring about swarming. Too frequently in all walks of life we look for a cause when in reality there is no one single cause, but in some cases a large number. As I have more experience with bees, I add more factors that cause swarming.

In the first place, bees swarm because it is their nature and it is their way of making increase. Therefore we may lay it down as a safe rule that when bees are left to themselves and are undisturbed by man they will swarm enough to keep up the race and make a substantial increase. As with all other forms of life, when bees have increased up to a certain point restricting elements enter in, so that they will not occupy more space in the universe than was intended. A great restricting element with bees is bee disease. The more bees there are in an area, the more readily will disease be spread.

It has been noticed that bees swarm

more as the size of their hive is diminished. Therefore beekeepers have sought to eliminate swarming by increasing the size of the hive. This will reduce swarming to a certain extent. It might be more correct to say that a large hive will allow bees to follow their natural instinct better, and excessive swarming will be prevented. In other words, a small hive will force swarming above normal. As it is natural for bees to swarm to a certain extent, which is influenced by a number of factors in different climates, it is evident that if the beekeeper wishes to keep swarming down much below normal he will have to interfere and not permit the bees to pursue their natural course.

Factors Influencing Swarming

Before we attempt to remove the causes of swarming, let us see just what they are. Bees swarm when the brood-nest is packed with bees both young and old; when the combs are filled with eggs and larvae in all stages; when there are plenty of stores in the hive; when nectar and pollen are coming in from the fields, and when the bees are well fed, the nurse bees secreting an abundance of bee-milk, called royal jelly.

I have given five reasons why bees swarm, and if any one of the five is removed, swarming will be less. If there is no honey in the hive, they will not swarm. If the brood-nest is not packed with bees, they will not swarm. If the combs are not filled with brood they will not swarm. If no honey or pollen is coming in, they will not swarm. If the nurse bees are not secreting an abundance of royal jelly they will not swarm. When I say they will not swarm, I mean there will be little swarming, for there sometimes will be colonies that seem to violate all rules. Some of these factors are beyond the control of the beekeeper and some are not.

I have not given as a reason a populous colony and a large number of bees, for with me the number of bees has not been a factor except in so far as they crowd the brood-chamber. Room in the hive does not prevent the congestion of the brood-nest. Colonies that hang under the eaves of buildings have been known to swarm, but the five conditions named above were present.

There are several other elements that will hasten swarming. It is well known that an old queen will swarm much more readily than a young one. Introducing a young queen to a colony before it has contracted the swarming fever will generally prevent swarming for some time. In that case the crowded condition of the brood-nest has been relieved for a time.

A plurality of queen-cells frequently causes swarming, as in the case of after-swarms and when superseding queens. Giving plenty of super room is a well-known way to reduce swarming. Again, the congestion of the brood-nest has been partly relieved. Placing frames of brood above the excluder also relieves this congested condition to a certain extent. Usually when the honey flow comes on in earnest swarming ceases because of the fact that the queen restricts egg-laying and the brood combs are not filled with brood. Thus the second condition named is not present.

Influence of Secretion of Larval Food

We will now discuss the last factor named—when the nurse bees secrete an abundance of bee-milk. A number of years ago Gerstung, a German investigator, gave as the reason for swarming that the nurse bees have more food for the larvae than the larvae can take, and that condition brings on the swarming fever. I am writing this from memory and may not be giving his ideas as they were presented. However, his theory was not widely accepted. In my experience in queen-rearing I have been led to believe there is something in it, and feel satisfied that it is one of the reasons why bees swarm.

In queen-rearing it is important to keep the bees in the swarming condition as far as possible without their actually swarming. If all conditions for swarming are present except the congested condition of the brood-nest, cell-building will go ahead in perfect order, yet there will be little swarming.

Now, if we bring about conditions opposite those that lead to swarming, queen-cells will be destroyed. Nothing will cause the bees to tear down queen-cells as quickly as the absence of the last named factor that causes swarming, that of the nurse bees' secreting bee-milk. When the nurse bees secrete more of this milk than the larvae demand, they build queen-cells so as to rear queens that require more of this milk, thus making an outlet for their surplus. When the nurse bees have worker larvae in numbers sufficient to consume their entire output of milk, they will not build queen-cells, and if given cells the bees will immediately tear them down.

As has been described in a previous article in Gleanings, I run colonies two stories high for cell-building, filling both stories with frames of brood. Later, when the brood in the upper story has mostly emerged, queen-cells are given, the lower story with brood and queen is set behind the first, and part of the bees shaken into the story previously on top but now occupying the old stand. As the nurse bees have been feeding a large number of worker larvae, they are in prime condition to feed queen larvae. But as soon

as the cells are sealed, the two divisions are reunited. This brings the reverse condition to that present when they were separated. Instead of giving the nurse bees less to do by taking away from them the worker larvae they have been feeding and giving them queen-cells on which to concentrate, they are given the hive of worker larvae to feed, whereas they have been feeding no larvae at all, the queen-cells having been sealed. What is the result? As might be expected, it is the reverse of that when giving them the cells. They have more larvae than they can feed, so they immediately tear down the queen-cells they have just built. To overcome this tendency, heavy feeding is resorted to unless there is a heavy honey flow—and it must be a heavy one.

Therefore, as the bees must have an abundance of milk before they will tolerate cells, they will not build cells and swarm unless they are secreting more milk than the worker larvae require.

In a previous number of Gleanings I have described how I prevent swarming by giving unsealed brood to colonies preparing to swarm after brushing off all of the bees. As the workers then have a demand for their surplus milk, they feel that they could not feed queen larvae, so they tear down the queen-cells. I have never had it fail. In experimenting with a colony preparing to swarm, I have given it two or three frames of uncapped larvae, when the bees would immediately tear down the cells.

Remedy for Swarming

In studying the problem as to why bees swarm, I wondered if this principle might not work in a practical manner when applied to colonies that are bent on swarming. It has always been successful in the limited way in which I have used it. Let us suppose we are running for extracted honey and have on one or two supers above an excluder when a swarm issues. The queen's wings are clipped, so you pick her up and cage her. Take off the supers and set the lower story, which contains the brood, on a new bottom-board just to the rear. Now place the extracting-supers on the bottom-board, and as the swarm returns it will enter these supers as readily as though the brood-chamber had not been taken away. After they are in, open the hive containing the brood and shake into the supers all the bees but those on one or two frames, then give them their queen. The bees will work in the supers as well as ever, and all notion of swarming is removed, as they have no brood to feed and they soon cease secreting the bee-milk. The hive containing the brood will immediately give up the swarming notion and tear down the cells. They have too much brood for the nurses to feed, and under such conditions will not tolerate queen-cells.

In two or three days the colony may be doubled up as it was before and the swarming impulse is completely killed. With me it is cured for the season, but in some localities it may be necessary to treat them again if the honey flow is prolonged; but I doubt if they would want to swarm again for a month at least.

Whenever I double up my cell-building colonies the bees tear down the queen-cells, as the brood is then hungry and the nurses can not supply the food. In the case of swarming the same rule applies, and when doubled up they are in a condition the reverse of that which brings on swarming. As will be seen, honey-producing has not been interrupted, as all the worker force has been working in the supers as before.

I have never tried this when producing comb honey, but believe it would work as to swarm-curing; however, I am afraid the bees would bring in pollen and put it into the sections. If a shallow extracting-super of combs were used under the comb-honey supers, it might be made to work. This much is sure; it has never failed to completely annihilate the swarming-impulse with me. In case a colony is discovered that is preparing to swarm, it can be treated before it actually swarms. In this case the bees are shaken into the supers instead of coming back from swarming. The other manipulations would be the same.

Vincennes, Ind.

[This principle as a remedy for swarming was applied in comb-honey production and was successfully used by many about 20 years ago. In 1905 it received considerable attention, as embodied in the "Sibbald non-swarming plan," described on pages 358-359 of this journal for that year. By this plan, when a colony was discovered building queen-cells in prepartaion for swarming the hive was moved off its stand and set a little to one side. A new hive with two empty combs was then set in place of the old one, and a frame of brood containing queen-cells, but not the queen, taken from the old hive, was placed between the two empty combs. The supers were then put in place on the new hive. Four or five days later (before any young queens could emerge) the comb of brood was taken out of the new hive and the queen-cells on it destroyed, when it was put back in place in the old hive. The new hive was then taken away and the old hive put back in its place on the old stand, thus reuniting the colony. If the honey flow is good, so that field bees are out all day, the reunited colony may give up swarming.—Ed.]

FROM THE FIELD OF EXPERIENCE

HONEY FOR ICE CREAM PARLORS

Honey Sundaes Increase Honey Sales During Summer Months

Beekeepers, are you taking advantage of the summer to increase your honey sales? This is the best time of the year to interest ice cream and soda parlors in using honey for their sundaes. The simplicity of its use is bound to appeal to them. The perfect blending of honey with fresh fruits is another good feature in sundae combinations. Just think! no cooking, no spoilage, no watse. Then there is the food value and the health value. They will be giving their patrons sundae combinations representing just the fragrance of the flowers. No synthetic or artificial flavoring—nature's own food sweet with all the original mineral elements retained.

Our newer knowledge of food values has directed our attention to the important role which mineral elements play in our daily diet. Honey contains small portions of all of its original mineral elements—phosphoric acid, lime, iron, and nitrates, and sulphates and carbonates combined with salts of lime and iron. Remember, beekeepers, in talking about honey to mention this fact. It is very important, since manufactured sweets have been processed from plants by means of heat and chemicals and have lost nearly all, if not all, of their healthful mineral elements.

Do not delay, but start right now to interest your ice cream parlors in serving honey sundaes. The Food Department in this issue of Gleanings contains honey sundae recipes. Show these to your ice cream parlor owners, sell them your honey, boost their business, and they will be boosting yours. Don't miss this excellent opportunity to increase the demand for honey.

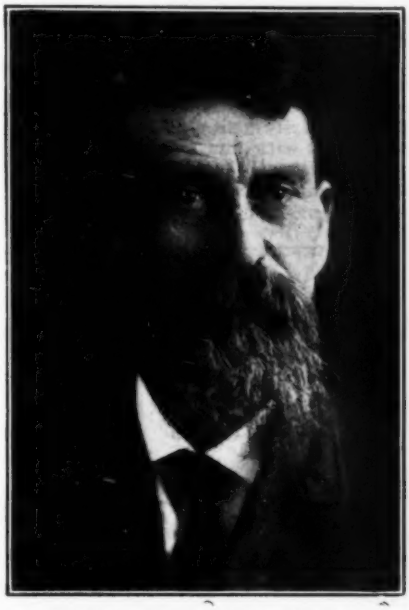
Malitta D. Fischer.

A GREAT QUEEN-BREEDER

Passing of the Man Who Developed a Strain of Long-tongued Bees

Mr. F. J. Wardell, formerly The A. I. Root Company's head queen-breeder at Medina, and later for himself, died on March 20, at the age of seventy-five.

Mell Pritchard, who is now head queen-breeder for The A. I. Root Company, once said to me, "I wish I knew as much about bee-behavior and queen-breeding in particular, as that man Wardell. He had a way of accomplishing results with a minimum of labor that most of us who think we know can not equal." Then Mell told how Mr. Wardell, working alone, managed a honey-producing apiary, reared a couple thousand queens each year, mowed all the grass, looked after the chickens, and kept everything sleek and clean. "My!" he said, "I do not see how he did it." Mr. Wardell was not known to the beekeeping world as are many who have



F. J. Wardell, the man who developed a strain of long-tongued bees.

advertised very extensively as queen-breeders. Most of his queens, after he left Medina, were sold to The A. I. Root Company. And well do I remember how orders came in specifying Wardell's queens.

I am frank to say that I was perhaps more indebted to F. J. Wardell and Mell Pritchard for "tricks of the trade" in queen-rearing and for facts about bee-behavior than to any other man at the time. I never wrote an important article involving bee-behavior or queen-rearing or general apicultural practice without consulting those men. Much of the bee-behavior that is now in the A B C and X Y Z of Bee Culture came from Mr. Wardell and Mr. Pritchard. In a larger sense we can say that Mr. Wardell's work is going on, not only through the A B C and

X Y Z of Bee Culture, but also through the work of Mell Pritchard.

Finally, I want to mention one of Mr. Wardell's exploits. It was he who developed that "two-hundred-dollar breeding-queen" that left her impress upon the apicultural horizon along in the late '90s and the early part of this century. We called her at the time "The Red Clover Queen," because her bees would fill up the hive during the red clover season when other bees would be almost starving. An examination of the tongue-reach of those bees showed that they were extraordinarily long. That queen was used as a breeder by Mr. Wardell and the rest of us, and many and many a twenty-five-dollar queen did we sell from that breeder.

Twenty years later Mr. Wardell developed another one almost as good, and he could do it again and again were he alive. I verily believe that when he died he carried with him some "tricks of the trade" that, even if they had been made public, could not have been put into practical use as he did. E. R. Root.

CENTRAL PLANT IN ENGLAND

Advantages of Trailer for Hauling in Operating Out-apiaries

As my holding in bees increased and more out-yards were established, I began to find that my light four-seater car was inadequate for the work of hauling made necessary by my central plant system. It was evident that I must in some way make provision for carrying larger loads, and the alternatives appeared to be either to buy a truck, to hire a truck, to convert my existing car into a truck, or to buy a trailer.

The purchase of a truck was more or less out of the question. The number of stocks that I had at the time did not justify the high initial outlay, combined with the very high costs per mile which would have resulted from the comparatively small annual mileage covered, especially in this country, where depreciation, taxation, and insurance constitute at least two-thirds of the cost of running a car, and these items are more or less the same whether the annual mileage be 1000 or 20,000.

The hiring of a truck has much to recommend it if it is always available at short notice, but naturally this is rarely the case, because a truck that is always available at short notice is doing very little work and its owner is not likely to be in business long.

The conversion of my pleasure car into a truck was more feasible than either buying or hiring a truck, but it would not have improved the car's appearance or usefulness for its original purpose, to say the least. Furthermore, it is almost impossible to arrange for the large floor space necessary to hold a good load of supers and at the same time distribute the weight properly on the chassis. Also the total weight-carrying capacity would be small if overloading and consequent damage to the springs and chassis generally were to be avoided.

My final choice, the trailer, appeared to cut out most of the disadvantages of

Load of supers for an out-apiary in England.

the other three alternatives and seemed not to have any very serious disadvantages of its own.

At the time, the advantages of the trailer for my purpose over any other form of transport seemed so great that I felt that there must be a snag somewhere. However, after carefully going into the matter, I decided to risk it, and bought a trailer which has been thoroughly up to expectations under all sorts of conditions for a considerable period of service. The only three objections I have found are: comparatively high first cost, high insurance, and some difficulty in reversing.

My trailer cost me about $200, which seems expensive when the car itself cost only about $1000; but on the other hand it was built to a standard and not to a price. The tires are pneumatics and the wheels, bearings, and springs are all standard Morris parts, partly so that when the trailer is not in use I have plenty of spare wheels and tires for my Morris car, and partly because spare parts are always easily obtainable. Of course, the spare on the car can be used on the trailer. Another result of using pneumatics and good springs is that the trailer is quite as well sprung as the car, which is saying a good deal. The body is built on a steel frame and is made of just the right dimensions to hold ten supers per layer without any necessity for packing or wedging to hold them in place. E. W. D. Madoc.

Dereham, England.

SIFTINGS

by J. E. Crane

I was glad to learn, on page 286, that sweet clover is still ahead as a "plow-down" crop. How slow have our American farmers been to appreciate this plant that is now producing untold wealth for our country!

* * *

During a severe storm it is always interesting to look in every direction to see if there is a rift or break in the clouds. So when the markets for honey are dark with clouds we look for openings, and we note with great pleasure the signs of better times.

* * *

Dr. Arnold Lorand commends honey as a health food. Mr. Hambleton is opening up our foreign markets, while the Kellogg Company is recommending honey far and near, to say nothing of other methods of bringing honey to the attention of consumers.

* * *

I am wondering if there is any way of comparing the consumption of honey fifty years ago with that of today. I know that increase has been enormous.

* * *

I learn from "Apples for Health" that, as the result of advertising, the per capita consumption of oranges has increased in ten years from 31 to 65, and in twenty years from 12,000,000 to 58,000,000 boxes. The raisin-growers in ten years have by co-operative advertising increased the consumption of raisins from one to over four pounds per capita, and have increased their sales from 70,000 to 2,000,000 tons. In the same way the Hawaiian pineapple-growers have increased the sales of canned pineapples from 400,000 cases to over 5,000,000.

* * *

That is a splendid article by Morley Pettit, commencing on page 288. It is as full of common sense as an egg is full of meat. Diversification, he tells us, is the remedy for our troubles and many of the troubles of the farmers of the country, and he is right.

* * *

Our fathers, or rather our grandfathers, came up from southern New England one hundred and twenty-five years ago into the wilderness of Vermont. They cut down the forest, built their log houses, sowed an acre or more of wheat, raised some corn, kept one or two cows, some pigs, a few sheep so that their wives could have wool to make into cloth and socks, and were comfortable. They reared large families and were happy, and did not even ask the government to help them.

It is refreshing to read what Mr. Nolan has to say on page 303 as to beekeeping in foreign lands.

* * *

From North, East, West, and South come reports of a cheerful outlook for a good season. We will all rejoice together for once. Should honey prices rule low as a result, we will still rejoice that the poor may enjoy it.

* * *

We beekeepers are so attached to our bees—at least some of us—that we think we want nothing but bees. Well, there may be a way to increase our income in spite of all our discouragements. A beekeeper who lives not far from Medina, O., whose crop of honey last year was pretty much a failure, writes that he has sold some four hundred cases of comb and ten tons of extracted honey and has seven tons that he expects to sell before the new crop is on the market. He has bought honey from localities where the crop was good, and so kept his old customers supplied. If all beekeepers were to do likewise it would solve some interesting problems.

* * *

On page 301 M. A. Gill says, "I believe that one-half of the producers could spend their time no better than in selling their own products to consumers, which would increase the demand." By the way, tell it not in Gotham nor publish it in the streets of Chicago, but here is a new kind of business that I believe will well pay any country lad of fair address: the selling of honey from house to house or from store to store in our larger towns, explaining its value and helping sales in every way possible.

* * *

One doesn't sit so comfortably in his easy chair after reading E. R. Root's accounts of beekeeping in the Northwest. If the pictures he has given us, pages 296 to 298, are fair samples, it is easy to believe that it is a healthy country and can produce men as well as honey.

* * *

I was surprised to see how much Mr. A. W. Finlay could say on pages 293 and 294 in favor of an entrance at the top of the hive, instead of at the bottom as usually made. I can well believe that bees will winter well in such hives, especially outdoors, as moisture can readily escape rather than condense on the combs or sides of the hive; but I fear such hives would hardly produce No. 1 or fancy section honey. I am glad, however, that Mr. Finlay has tried it out.

FROM FOREIGN LANDS

W. J. Nolan

The mite, *Acarapis woodi*, known as the cause of the Isle of Wight disease, is said in the February issue of the Schweizerische Bienen-Zeitung to be gaining ground in Switzerland. Those at the head of the German-speaking Swiss organization now label the acarine disease as the most dangerous of all infectious bee diseases, and hold that the only efficient way to wipe out the pest is to destroy infected colonies.

Since the discovery of *Acarapis woodi* on the border of Bavaria in 1925, near the scene of the discovery of the mite in Austria, no further direct evidence appears to have been forthcoming as to the presence of this plague in Germany until Doctor Prell discovered it in Saxony in March of this year, as recorded in the Leipziger Bienen-Zeitung for April. The original Bavarian infestation was completely cleaned up, and, inasmuch as the importation of living bees into Germany was prohibited in 1924, hopes were entertained that the country would remain free from further trouble on this score. It was at the time of the Bavarian discovery that Doctor Armbruster made his announcement of having found in colonies in various parts of Germany a mite not outwardly distinguishable from *Acarapis woodi*, but still not causing any noticeable damage. It will be recalled that Doctor Morgenthaler has reported the same thing from Switzerland, and that he also found this seemingly harmless "double" of the injurious *Acarapis woodi* on bees sent him from Quebec in Canada, a fact referred to in these columns for August, 1926.

Those interested in Caucasian bees in this country since the World War are doubtless familiar with the name of Doctor Gorbacheff, Director of the Bacteriological Laboratory of the Tiflis Station of Sericulture in the Georgian Republic. His biography appeared in Opitnaya Paseka for February. He was born in 1864, and graduated from the University of Moscow after paying special attention to the study of zoology and bacteriology. Outside of work on diseases of the silkworm, Doctor Gorbacheff is known for his studies on bee diseases and the Caucasian honeybee.

Honey imports into Switzerland during the year 1926 showed a decline of about 20 per cent, ascribed in the Schweizerische Bienen-Zeitung for March to the hold-over of the 1925 crop. Of the total some 670,000 pounds, France, in 1925, furnished the most, about 29 per cent. The United States, as in 1925 also, was second with about 21 per cent. As far as total value of the importation is concerned, however, the importation from France accounts for more than 45 per cent of the total, while that from the United States does not quite amount to 15 per cent. It is of interest to note that New Zealand honey, which is reported to sell for a higher price on the English market than does honey from the United States, is listed by this article as bringing on the Swiss market a slightly lower price than honey from the United States. Chile ranked third in the quantity of honey furnished Switzerland in 1926, providing about two-thirds as much as did the United States. Cuba was fourth with a total of a little more than one-half that of the United States. Roumania furnished almost one-quarter as much as did the United States, while Hungary was not far behind. Of the 282,000 pounds of wax imported in 1926, France furnished over 25 per cent. In all, France, Morocco, East Africa, and the British Indies furnished about 80 per cent of the total importation of beeswax.

That brood can stand a limited amount of exposure to much lower temperatures than is ordinarily supposed to be the case is the gist of an article by Doctor Himmer in the February issue of the Pfalzer Bienenzeitung. He reports that larvae can remain alive outside of the cells as long as six days at a temperature not lower than 64.4° F., and that he had observed larvae which survived a temperature of 53.6° F. when left out of the hive over night. On such occasions, of course, the larvae took no food. They appeared lifeless, but retained a fresh appearance. On being put back into the hive they were found to develop normally with no other apparent effect than that of having their development retarded for a period equivalent to that during which they were under abnormal conditions.

Himmer says that larvae kept for twenty hours at a temperature of 46.4° F. succumbed to the exposure, while those kept at this temperature for only six hours continued their development after being put back into the hive. Brood in combs left out of the hive for twelve to eighteen hours at room temperature is said to have developed normally on being returned, although it was neglected at first by nurse bees until it had warmed up somewhat. Himmer states further that on another occasion he left combs outside of their hive for a day and a night in a container which afforded free circulation of the outside air. The tem-

perature during this time dropped as low as 62.6° F., yet both sealed and unsealed brood in these combs developed on being returned to their hive.

The difference in the temperature under which the larvae were kept is given by Himmer as the reason for the apparent conflict between his finding that larvae can survive a long period without food and the findings of other investigators like Lineburg, who, in Gleanings for January, 1925, reported that larvae observd by him had not survived a starvation period of four to five hours. Himmer remarks that Lineburg kept the larvae used by him at the normal brood-rearing temperature, while those used in Himmer's work were all subjected to lower temperatures. Such temperatures, he argues, mean a lessened rate of metabolism, and, consequently, a diminished demand for food. Under such conditions growth becomes arrested or suspended, but may be resumed at the point where interrupted if the larvae is again brought under proper conditions soon enough. Himmer concludes that his findings in this respect are quite in accord with those of Milum in the American Bee Journal for August, 1925, which indicate a lengthening of the various larval stages beyond the normal average if the larvae are subjected long enough to temperatures lower than normal for brood-rearing.

The behavior of the honeybee in gathering propolis has been well described in a late issue of Biologisches Zentralblatt by Doctor Rosch, one of Professor von Frisch's former students. Doctor Rosch recently came before the attention of beekeepers through his work on the division of labor in the honeybee, which was mentioned in Gleanings for January, 1926. In his latest work Rosch has found that obtaining a load of propolis involves a different process than that in obtaining a load of pollen, since in loading the hind leg on either side of the body the mandibles and the three legs on that particular side only are used. In the process the other three legs serve simply as a means of support and attachment. The mandibles serve to bite off a piece of propolis, while the first leg is employed to remove the piece from the mandibles. This leg is then bent back while the hind leg is being brought forward, the two meeting half way. The middle leg comes into play at this point in helping the transfer to the tibia of the hind leg and in pressing the particle firmly onto the latter. Rosch states that the bee quite consistently places the first particle on the hind leg of one side of the body, the next on the other hind leg, and so on alternately. The time required to load up each leg depends primarily upon the temperature. In hot weather large particles of propolis are readily bitten off; in cool weather only a small piece may be bitten off at a time. Under varying conditions of temperature, he observed variations in the time required to load up each leg ranging from fifteen minutes up to a whole hour.

Rosch's description of the action of the propolis-gatherer on its return to the hive is quite in accord with that given by Doctor Leuenberger, of Switzerland, as mentioned in Gleanings for last January. To his surprise, he found no evidence of any "dance" on the part of returning propolis-gatherers, as has been described for nectar and pollen-gatherers. On entering a hive the propolis-gatherer, after perhaps receiving a little food from her hive mates, goes directly to the spot where the propolis is to be used. Here she waits until other workers, who are engaged in propolizing inside the hive, unload her little by little by biting off particles of propolis from the loads.

In his experiments Rosch made use of marked bees, and found those observed gathering propolis to be slightly beyond the normal age for beginning field duties when they were first noticed. The propolizers within the hive, on the other hand, were found to be of the usual age of bees performing the second division of hive duties, such as taking nectar from the nectar-gatherers, stowing away pollen, and the like. The propolizer, on biting off a piece of propolis from the gatherer's load, runs at once to the spot where it is to be used and fits it in with its mandibles. When propolis is used for the first time, nothing is mixed with it. Wax is only added when propolis is being used over again, Rosch says.

The time required for a gatherer to become rid of its load varies. On one accasion Rosch found that a certain propolis gatherer waited one hour before it was entirely relieved of its load. On another day the same bee had to wait seven hours. During this time the bee was not observed making a single attempt to release itself of its burden. On being relieved of its load the gatherer goes out again, provided it is not too late in the day. In this connection Rosch points out that, because of temperature requirements, the hours of propolis-gathering are much shorter than those for nectar and pollen. In his section of Germany in August these hours are from about ten in the morning to four in the afternoon. During the hours of the day when it was too cool to gather propolis the gatherers remained inactive in the hive. Rosch did not determine the average length of the period of its life during which a bee will gather propolis, although he found certain bees gathering it for several days.

FROM NORTH, EAST, WEST AND SOUTH

In Southern California—The weather finally moderated so that the sages and oranges began yielding nectar about April 15. Colonies were again on an upward grade after weeks of a very heavy consumption of stores, and also a heavy depletion of the field force. Bees were very strong and in fine condition for the honey flow fully three weeks before it started. This condition caused a very heavy consumption of stores and a great tendency to swarm. April 15 to 20 for the honey flow to commence and May 6 to 12 to begin extracting are good dates to remember, one year with another.

Just what the oranges have yielded in other parts I do not know, but here in Corona the yield is a disappointment. The trees are well through blooming and the amount of honey stored is not what we were led to expect a month ago. Cool, cloudy weather has prevailed to such an extent that the honey flow has been very intermittent. Some days the flow would be all that one could ask for, only to be followed by days that showed little or no gain. This condition has prevailed all spring, and yesterday and today are cloudy and cold, so that the bees do well if they "make their board," as the old Dutchman said. Better wait until you have the honey in cans before you count it, then you will not be disappointed.

The abundant moisture of the past winter has caused all kinds of growing things to show how glad they are to be alive. Grass and flowers are knee high in practically all apiaries where it has not been cut, and if left to get dry will make an excellent place for fire later in the summer. An ounce of prevention, etc.

With the old honey well cleaned up, the outlook is good for a fair price and a good demand this year. We have talked with a number of the large producers of orange honey, and while they do not want to be arbitrary, they feel that they should get 8½ cents for the orange honey. This is practically all the honey that many beekeepers get, and 8½ cents is a fair price, at which the buyer can buy and sell again at a profit, and still let the consumer get his honey at a fair price. From present prospects prices for wild buckwheat and alfalfa honey will be governed very largely by the foreign demand and the size of the crop in other parts of the country.

The demand for honey for shipment to Europe was a blessing last year, for without it the carry-over would have been very great in southern California; and large carry-overs are always depressing on the early market for honey the following year.

The new bee-law is now in the hands of the governor, and here's hoping that he signs it and that California beekeeping gets under the agricultural department where it rightfully belongs.

Corona, Calif. L. L. Andrews.

* * *

In Texas—The first three weeks of April gave promise of the best honey flow in years. Warm and even weather with light showers occurred. All of the major honey plants came into bloom at once and a honey flow started before it was expected by the beekeepers. Surpluses of two or three pounds per day were stored all over the southwestern country. This condition continued for about eight days, and then the flow stopped so quickly that the working force of bees could not adjust themselves to the change, and robbing was the order of the day. A large number of weak colonies were destroyed, and many of the stronger ones were greatly damaged. The cause of the stopping of the honey flow was a four-day hot wind from the Southwest. The wind removed all the moisture from the flowers and in many cases the mesquite blooms looked as if they had just opened when in reality they were so dry that the least touch would cause them to fall to pieces. A large number of reports from southwestern Texas show that this condition of affairs was everywhere. However, in some places a surplus of forty pounds was stored and some few beekeepers have extracted. Just at present the weather is such that there is little hope of a honey flow of much importance, unless mesquite blooms again in June or July.

The reports from central and northern Texas are more encouraging, and in the cotton section the beekeepers report their bees to be normal at this date (May 1).

It is very seldom that all of the major honey plants of the chaparral country are in bloom at once, yet that was the condition this month. The mesquite tagged out and bloomed with the coming of the leaves. Guaiacum, or grease brush, catsclaw, and huajilla were all blooming at once, and the dry weather put them all out of bloom at once. The same hot windy days also put an end to the prospect for a horsemint honey flow. The mint plants are only about half size and do not seem to be yielding much nectar. In the lower

central part of the state horsemint honey flow is on and of normal size. Horsemint is reported in good condition throughout the cotton belt and the northeastern section. The loss of this expected honey crop has added to the gloom of the beekeepers in the chaparral country, as this is their second year of almost total failure. H. B. Parks.

San Antonio, Texas.

* * *

In Utah—When some one said, "This season is unusual," the reply was, "Yes, and all seasons are unusual, either good, bad, or indifferent." The weather was cold and backward in northern Utah during April, and quite a large per cent of the colonies have died from starvation where beekeepers did not have a mental picture of the condition of their colonies.

There is not much emerging brood at this date, but good colonies have a large amount of unsealed brood, which is very expensive. Most bees are living from day to day on what they gather. Old bees are fast disappearing and good weather from now on is the only hope for many colonies.

Willow and dandelion are two weeks late, fruit bloom is heavy, so conditions should improve. While the deep moisture is ample, the surface is fast drying from the effect of sun and wind. Rain is now needed to prolong the early bloom.

Most honey-producers are very optimistic, expecting this is to be a banner year; but, as the old Scotchman said, "I hae me doots," and may be it will be better so. Possibly nature, that great leveler, will slow us up a little in production, and teach us how to induce the public to use our product. The producers of candy, pickles, pills, etc., are a long way ahead of us in promoting consumption of their products. One would naturally think that there would be a large consumption of honey when it is so plentiful and cheap, but there is but little local demand and no inquiries for car lots. It's always darkest just before the dawn and it may be better soon. M. A. Gill.

Hyrum, Utah.

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In Arizona—Many conflicting reports have come in as to the condition in which the bees have come through in the different parts of the state. Some report that colonies dwindled very badly and feeding was necessary in some localities.

Feeding the bees in the open is being practiced generally here, as it is a great time and labor saver, and really practical where a large number of colonies are in need of feed. We place the feeders from fifty to two hundred yards from the apiary. The honey is heated and ten gallons of water is mixed with five gallons of honey. Substantial floats are placed in the feeders so that the bees are able to get the feed but not drown. On a warm afternoon the bees from all colonies will work on the feed and it is distributed more generally than one could do in two days of work feeding each colony separately as we used to do.

Bees in this locality came through with a large amount of stores which have granulated. As it is impossible to extract such combs of solid sealed honey, we put the supers of granulated honey out in the open and the bees cleaned them out very well. If this had not been done the granulated honey would have given us no end of trouble through extracting. This has to be done before any honey is coming in from the fields if the bees clean the combs out thoroughly.

Mesquite is opening as fine as I have ever known, but it is impossible to say how it will turn out. Catsclaw will not be in blossom for two weeks yet. Some very good rains were received here through April and all honey plants should be in very good condition. Extracting has already begun in some localities. A large per cent of the honey will be amber and light amber, as a result of the favorable spring rains and an abundance of wild flowers. Leslie Wedgworth.

Oracle, Arizona.

* * *

In Alabama—The package shipping season so far has been slightly better than the average, despite the low price of honey and the few winter losses in the North. Practically all shippers report a good number of orders, but conditions have been favorable and practically all orders have been shipped on time.

The early honey flow was very good while it lasted, but it was cut short by one of the driest spells ever known in this section for the time of year. At this time (May 4) the plants are simply drying up, with no prospect of rain.

White sweet clover has started blooming, which is fully two weeks earlier than usual; but unless we get rain soon the crop from this source will be very short. As this is our only surplus-producing plant, when it fails there is practically no honey produced in the Black Belt.

In ordinary seasons the early packages are the ones that are hard to get, but if this drought continues there will be a shortage of late packages with the shippers who did not do the bulk of their shipping in April. J. M. Cutts.

Montgomery, Ala.

In Manitoba—At this date, May 3, the weather is cool and decidedly wet. We are having fine weather about every third day. The weather is ideal for shipping packages, which are coming through in splendid condition. The first package arrived on April 1 and was hived on April 2 in a double-walled hive of the Buckeye pattern. The next day was fine and warm and the bees had a good flight; but the next night the thermometer went down to 15° and the hive could not be opened for a week.

On April 18 this three-pound package had three combs partly filled with sealed brood, which goes to prove to our satisfaction that the package queens will lay more consistently in cool weather than the queens in wintered-over colonies, as a well-wintered apiary that I examined on the same day showed only a few eggs in scattered cells, although the colonies were strong in bees. On April 29 this package had many young bees emerging, five combs with sealed brood, and a sixth with some eggs in it. The patches of brood already emerged in three of the combs would be about as large as one's hand. I examined the wintered-over apiary again and found fully as many combs full of eggs and larva, but little of it sealed. After their long confinement the queens in the wintered-over colonies do not settle down to fill combs with eggs except on the bright sunny days. When the days are cool and wet they lay few eggs, while the package queens work all the time.

One of the best shippers states that I missed two very important points regarding shipments on syrup. They are these: First, the syrup used in these cans with the No. 10 holes in them should be carefully strained before it is put into the cans, so that no grain of sugar or foreign matter can clog these small holes. Second, all packages of bees should be fed with syrup painted on the screen while the bees are at the station and before they are put on the train. Anyone can readily see that these are very important, and since they are new to me I pass them on.

Winnipeg, Man. L. T. Floyd.

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In New York—This is May 7. Early sweet cherries are in full bloom and have been for three days. With ideal weather, bees are working them heavily, and have no doubt stored considerable nectar. While we have made no general spring examination of the bees, and they are still in their winter packing, the roar in the apiary this evening approaches that of a clover honey flow, and many colonies are clustered outside of the packing-case entrances.

All fruit trees are budded full, and, with favorable weather conditions, bees will be able to make a little better than a living for the next two or three weeks, and probably store enough to insure an abundance to last until clover comes.

Although the acreage of clover is small, it is looking fine, and there is considerable wild clover starting in the older meadows and pastures, so that it now promises to be a fairly good clover season. Beekeepers' enthusiasm is running rather low, however, on account of present low prices on honey. Very little business is being done in new supplies, and many beginners and small beekeepers are offering their holdings for sale. As past attempts have proven us poor prophets, we are not going to attempt to prophesy for the future in beekeeping, but so long as we can make a living with side lines we are going to continue beekeeping as our main business. H. M. Myers.

Ransomville, N. Y.

Mr. L. T. Floyd inspects a shipment of bees on arrival at the express office in Winnipeg. These bees are from one shipper in Mississippi.

In Louisiana—Today, May 6, finds many of our best beekeepers fighting, as you might say, with their backs to the wall. The greatest of all floods in history is encroaching upon those who have their bees located in the lowlands of Louisiana, and every effort is being made to save them. One-third of our queen-rearers and package-shippers are located in this threatened portion of the state, and quite a number have already had their homes inundated with water. I have heard from several of them and they say they are ready for the worst. They have built platforms, and should any breaks in the levees along the large streams occur, they in a day's time will have removed all hives out of danger.

There are thousands of farmers throughout the already overflowed area who own from five to twenty colonies of bees. In their mad rush to save themselves and families they have abandoned everything outside of a few household goods. The bees, of course, are destroyed.

I have sent out an "S. O. S." call through the Associated Press for all people who own bees to have them immediately placed on platforms above the expected high water, placing over each brood-chamber three or four supers with drawn combs or full sheets of foundation. And when they return they will find an abundance of honey, the only thing then possible to find on the farm which can be turned into money.

The honey flow in this overflowed area at this season of the year and for the next two months comes from the trees and vines above high water, such as honey locust, black gum, magnolia, bay, buttonwood, poison ivy, virginia creeper, snow vine, and pepper vine.

Baton Rouge, La. E. C. Davis.

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In Wisconsin—Throughout Wisconsin the bees seem to have wintered well. A few colonies have been lost, but reports indicate that this was almost entirely due to starvation. Clover plants are in good condition through most of the state, and the chances for a good crop were never better. The market is still in very bad condition, and the movement of honey is only slow to fair in practically all sections of the state.

Two interesting law cases in connection with bees are now under way in Wisconsin, with the beekeepers so far having the best of the argument. In the village of Steuben, Crawford County, Wisconsin, one of the residents has been attempting to force a beekeeper with several hundred colonies to move his bees out of the village. The resident, being somewhat influential, brought the matter to a vote at the city spring election, and 115 votes were cast. According to relayed information, of the 115 votes cast, 53 would permit the bees to remain in the village, while 62 would require that they be moved. However, after the election the village officials seem to have lost confidence as to their power to eject the beekeeper, and so far have made no effort to compel him to move out of the village.

In another case, a lady standing near a bee-yard was stung by a bee, and is supposed to have been seriously ill ever since the accident. As a result a suit for $2000 damages was brought against the beekeeper, and the case was to have come up for trial on April 28. On April 27 the lawyer for the plaintiff stated that he had no case, and asked the judge to dismiss the case. H. F. Wilson.

Madison, Wis.

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In Michigan—Bees wintered unusually well in Michigan. There would be little to complain about if every winter were as nice for the bees. But the weather since March 1 has been just cool enough to keep the bees from gathering much pollen, and practically no nectar has been available in some sections, with the result that some starvation has been reported. Many who felt that the bees had plenty of stores last fall have been busy feeding for six weeks or more. One commercial beekeeper writes that he never saw less pollen available, and another says that there is less brood than a few weeks ago. But some good warm weather immediately will correct the situation.

While the honey market is dull in general, local sales are some better for April than for March. Very little honey is in the hands of beekeepers in southern Michigan, and few sizable lots are on hand in central and northern Michigan. Probably little honey will be carried over, especially if the beekeeper has not refused offers at the prevailing market price.

Governor Green has signed the new law enacting more stringent regulations for the eradication of foul brood. As revised, the law gives the commissioner of agriculture more effective means of prosecuting the area clean-up campaign, with provision for jail sentence with fine, at the discretion of the court. In brief, teeth have been put into the bee law and progress may be somewhat more vigorous. It will be but a matter of a few years now, at the present rate, until most of the state will be practically free from foul brood.

East Lansing, Mich. R. H. Kelty.

In Ontario—This is May 10. After all the promises of a very early spring, the season is but normal. This is accounted for by the fact that we have had a very cold April and the first week of May has been weather of the same brand. Rainfall has been less than usual for this time of year, but at present it is raining heavily and the ground will have all the moisture necessary if we have warm weather soon. Bees have wintered well, as intimated in the last issue of Gleanings, and we have had but little shortage of stores to date. We have had a very long period of sunny weather, but too cool to allow nectar to be gathered. As a result we find a few colonies getting short, and have fed a small quantity of syrup and a few combs of honey known to be in perfectly good condition.

If we get good weather for fruit bloom and dandelion, so that bees can get enough stores to build up strong, I feel that prospects are at least as good as usual for getting a fair crop of honey. Of course, many things may happen in a few weeks, but the beekeeper never borrows trouble from the future. If he does he has surely missed his calling, as the business of commercial beekeeping is about as near to gambling with the weather as can be found in any industry.

Honey markets continue dull, the European demand included, with low quotations. Hardly a day goes by that I am not asked by prospective beekeepers, as well as by many already in the game, what I think of beekeeping as a business for the future. It is needless to say that my ideas are no better than those of others, but I certainly look for worse conditions before we get in much better shape so far as marketing is concerned. With only the European markets to look to for an outlet for our surplus, we are on a world basis for marketing, as all countries compete in those markets. We must either consume much more honey at home than we now do, produce less, or sell it at a low price. There is no other alternative, as I see the matter. Consuming more honey at home appears to be the most logical solution of the question, but that problem is yet to be solved.

Some have asked me why we stay in the business if I hold such views. This is surely an easy question to answer. What little we have in the way of worldly possessions has come to us from the labor of the bees. We are equipped to carry on that line of work, and if we changed to some other industry it would mean a sacrifice, as it is not at all likely that we could sell our equipment at a price that would give us back the money invested. Then, again, my boys have never done any other kind of work very extensively, and I myself have done little else for over 20 years. Frankly, we hardly know what we could best go at if we gave up beekeeping, for we know little of any other industry. Again, we like to keep at beekeeping because we like the work. Perhaps that is our strongest reason for choosing to take a chance and stay at the game, for it is worth something to be able to do something and be happy while doing it.

This is the season for package bees to arrive from the South, and judging by local conditions I would say that fewer will be sent than in some years, owing to good wintering in the North, as well as to other causes.

My attention was called a few days ago to a shipment of 50 two-pound packages from Alabama that had arrived in perfect condition. The receiver estimated that there was not a double handful of bees dead in the fifty cages. They had been put in good shape in proper packages, and handling had been good in transit. Last but not least, the weather had been quite cool all the time the bees were on the road.

A shipment of 25 packages from another shipper in Alabama arrived at about the same time, but what a difference in their condition! In the first place, heavy crating had been used, and the 25 packages were actually billed at 210 pounds. An express bill of $24.31 was attached—fully a third more than with proper crating. The cages were much too long to go into a Langstroth hive, and as the weather was too cool to shake bees out in front of hives, what could we do with them? The only way we could figure to handle them was to remove the syrup tin, invert the packages on top of the frames, and allow the bees to go down into the hives. It was an awkward job to pack around the top to keep the bees snug in the cool weather, but we did the best we could by using sacks, etc. Two days later we returned to the out-yards to look them over, and actually found some of the bees had starved in the top of the cages as they had not gone down to the frames. This just shows how losses can occur in shipping bees—losses to shipper as well as receiver, as the latter does not feel that he is to blame when packages come in that condition. With crates of the proper size to slip down into a standard hive, it is easy to place the bees, and I have never yet had a case where the bees refused to come up out of the cage and go onto the combs placed alongside the package.

Markham, Ont. J. L. Byer.

HEADS OF GRAIN FROM DIFFERENT FIELDS

Swarm-Control by Requeening I have very good success in controlling swarming by letting the bees swarm and then using the queen elsewhere in some weak colony or killing her. The bees go back to their hive, and in a few days I destroy all queen-cells except one. This plan might require a second visit in about seven days to see if there have been any more cells started. By this time the honey flow usually is strong enough so that the bees give up swarming and go to work in the super. If I have any fear of swarming when the young queen emerges from the cell I place a queen-excluder on the bottom-board of the hive for about three days after she emerges, then remove the excluder and all is well. A. B. Browning.

Afton, Okla.

Novel Way to Hold Queen Clipping queens has no terrors for me now. I used to hate the job. It all seemed very easy, according to the writers in the bee books and journals. You caught the queen with your right hand and transferred her to the left, firmly but gently grasping her by the thorax and allowing her legs to grip your thumb. By the time I had reached this stage my fingers seemed all thumbs, with the queen trying to grasp them all, while I was getting more nervous and the queen more excited every moment.

I have clipped many "on the run," but this practice has its disadvantages. Unless one succeeds at the first attempt it is better to close the hive until another opportunity occurs. The following procedure is a better way:

Take a piece of thin board, say about 12"x6", and smear it well with thick honey. If partly candied, so much the better. Drop the queen on this board and she will stick her wings up for you to clip, and stick her legs down because she can't help herself. After clipping, place the edge of the board near the top of the frames and let her crawl off, or push her off if she is too slow. Arch. C. Askew.

St. Thomas, Ontario.

Two Queens in Same Hive Today while clipping queens I was surprised to find the old clipped queen in a colony which had built supersedure cells and reared a young queen early last July. My record shows that I saved three fine supersedure cells before allowing one to emerge. Today both queens were found on the same frame only two inches apart. Mother and daughter have wintered together and lived in the same hive nearly ten months. I have frequently noticed two queens in the same hive for five or six weeks, but never all winter. Is this an unusual case? Claude H. Davis.

Brazil, Indiana.

[This occurs frequently. Each spring, when clipping queens, the Editor finds from two to five such cases in each yard of 60 to 70 colonies. Last spring one colony was found to have three queens—mother, daughter, and grandmother—living peaceably together. The records indicated that the grandmother was at least four years old. She was small and dried-up in appearance, and did not look as though she were capable of laying any eggs. All three queens were left in the hive and the colony went through the season without swarming.—Editor.]

Queens Balled Above Excluder Six times last year I put queens together with three or four frames of brood above an excluder. I did this twice accidentally, in which cases I found the queen about three of four days afterwards dead on top of the excluder. That led me to try again purposely and watch results. Two or three hours after putting the queen above the excluders I found the bees running at the entrance, and on opening the hive there was the queen being balled on top of the excluder, in each of the four trials. I liberated the queens and ran them in the entrance. If we separate a brood-nest with an excluder the bees might try to induce the queen to lay eggs in the chamber above. Since the queen is not able to pass the excluder, the bees ball her, then build cells. We thus create the very condition that we wish to avoid. When they build the cells a populous colony will swarm with the first young queen. When the beekeeper inspects the colony eight or nine days after dividing the brood-nest and can not find the queen, but finds lots of cells, he naturally thinks the colony has swarmed and lost the old queen through being clipped. I venture to say in a lot of cases the queen has been balled. If bees ball a queen on one side of an excluder, why should they not ball her on the other? T. Brotherwood.

Oshawa, Ontario, Canada.

Excluder Zinc on Nursery Cages I have had trouble by having undersized and dark queens emerge from cells in a nursery cage covered with wire cloth. To overcome this I took the wire cloth off both sides of the nursery cages and substituted zinc queen-excluding metal. I put twelve cages in a frame with a cell in each. I examined them before the queens emerged and found bees in each cage around the cell tip. From each cell a fine, vigorous, light-colored virgin queen emerged and I mated some nice queens from them. I placed the frame above an excluder on a good strong colony where the emerging queens had plenty of warmth and lots of bees.

Grove City, Pa. A. M. Kennedy.

Two-Story Hive for Comb Honey As soon as spring brood-rearing has expanded the strength of the colony sufficiently to occupy a second hive-body with combs and preferably enough honey to carry the colony through to the brink of the honey flow, I give an extra hive-body or extracting-super for brood-rearing. The aim is to have the greatest possible number of workers to the colony when there is nectar for them, and the least number to consume honey when there is no nectar. The packing is left on as long as weather will permit. The weak colonies are united with colonies of medium or fair strength. Frames of honey are equally apportioned and feeding is practiced if necessary. At the beginning of the honey flow the extra hive-bodies given for brood-rearing are supplanted by comb-honey supers.

Wingate, Ind. Roy Stephens.

Clipping Queens on Comb To the average small beekeeper or the amateur, clipping queens is a delicate job. They think that if the queen is held tight enough to keep her from crawling out of the fingers they will mash her, or if held too loose and she crawls away she will probably get lost in the grass. To avoid this, I clip them on the comb as they walk along. It is very much easier than catching them, transferring from one hand to the other, hunting the scissors out of the weeds, and proceeding in the orthodox way. It is better to have the queens walk a little down and away from the operator. When clipped in this way they apparently never know it unless touched with the scissors. Sometimes they do not stick their wings up but can be made to do so by touching them. When they are still is the best time to get in the dirty work. I have clipped dozens of them and have the first one to injure yet. The very worst injury by catching is that the bees sometimes ball them after they are turned loose.

Odebolt, Iowa. C. A. Bird.

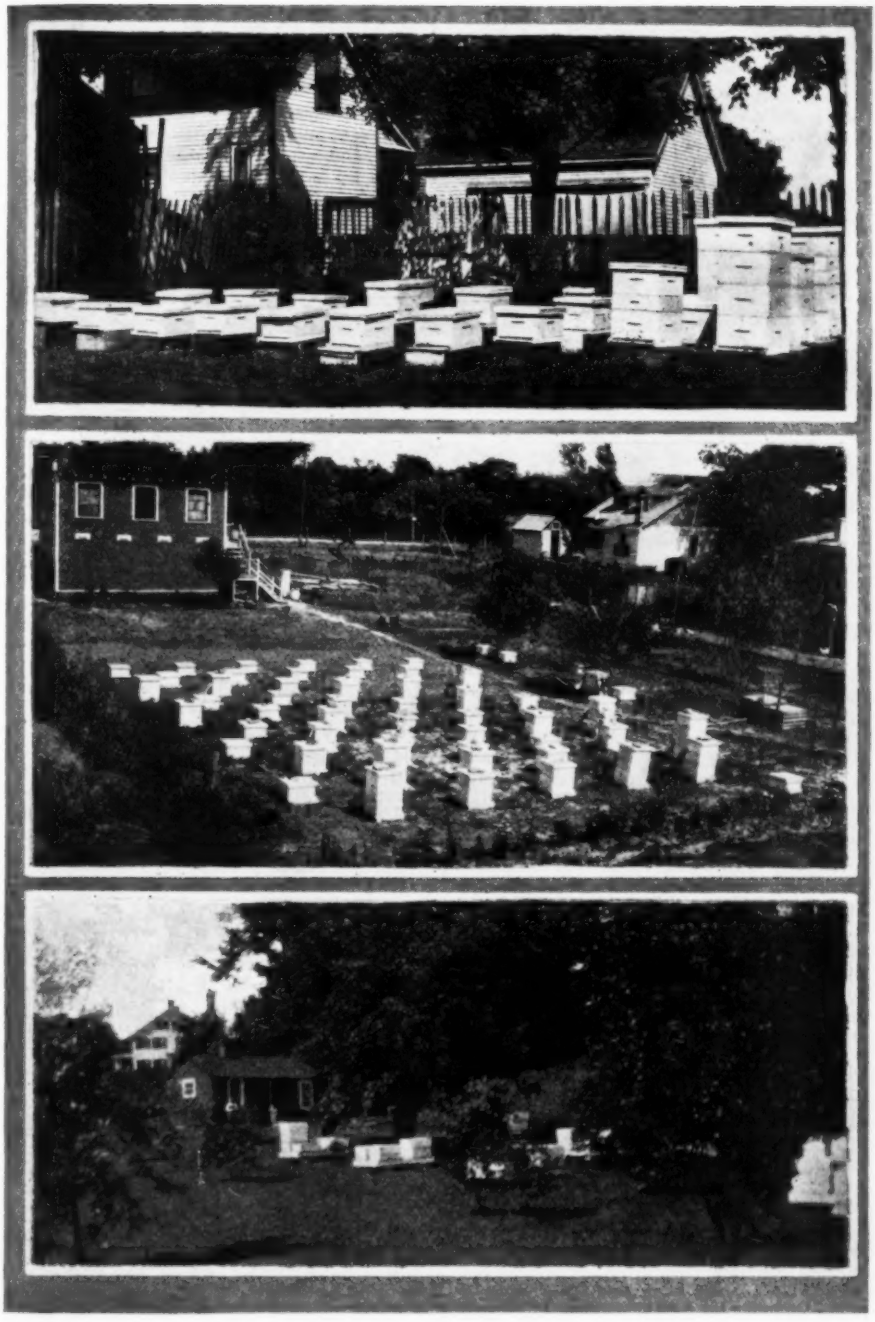
Preventing Pollen in Sections In Talks to Beginners in May you advise that the supers be transferred directly to new swarm when hiving a swarm. I wonder if I have a peculiar situation here. I have tried this for several years, and in practically every instance unless I had a good clean old brood comb in the brood-chamber, the bees would put pollen in the supers until comb could be gotten ready below. And I do not think it failed in one instance where foundation was used. This could be avoided if the supers were left on the old stand for at least 24 hours. Perhaps others have not been bothered, but I had dozens of good sections spoiled in that way before I found out the trouble. Harold I. Perrin.

Sargent, Neb.

[In some localities it is necessary to put at least one empty comb in the new brood-chamber or wait until the bees have drawn out the foundation before transferring the supers to prevent pollen in the sections when hiving swarms. In other localities there is seldom any trouble from pollen in the sections.—Editor.]

Easy Way to Destroy Ants This spring we believe we have found the simplest, quickest, and cheapest way yet to destroy Argentine ants. We bought five pounds of boll weevil cotton poisoning, costing us 15 cents per pound, the kind that has arsenic in it. The poison is white like flour. We put this into three five-pound honey pails and punched a lot of nail holes in the lid. We then simply shook the pail a little and dusted the poison over the ground wherever we saw any ants, and under the hives. In the mornings we dusted every place where we saw fresh earth that the ants had brought up during the night. We have been trying this only a week, and we have to hunt extra well now to find any new signs of ants around here. They seem to carry the poison in on their legs and thereby get it to their brood and to their food in the nest. Last year we spent fully $10.00 for poisons of various kinds, including gas and carbon bisulphide, besides doing ten times as much work as we have done this year so far. We still have a third of the boll weevil poison left. We plan to take some to the out-yards every trip we make.

Weslaco, Texas. E. B. Ault.



THREE EASTERN APIARIES

Upper—Apiary of H. G. Payne, Bible Hill, Nova Scotia. Middle—Apiary of T. A. Light, near Montreal, Quebec. Lower—Apiary Mount Hope, property of Brooks D. Cook, Williamstown, Massachusetts.

TALKS TO BEGINNERS

Geo. S. Demuth

June should be a happy month for beginners in beekeeping. Throughout the greater portion of the country the main honey flow begins some time during the month. In portions of the South the early honey flow is already a thing of the past and the surplus honey is being harvested; but in many cases in the South another honey flow may come on after an interval, which may be followed later by still another. In the middle latitude this journal may reach its readers in the midst of the early honey flow, while in portions of the North the main honey flow may not begin until late in the month. There has already been considerable new honey stored even in portions of the North from early nectar-bearing plants, especially fruit bloom and dandelion. Where a large amount of honey from these sources has been stored, this addition to the food supply of the colonies has put them in good condition for the main honey flow, which in the greater portion of the United States and in Canada is yet to come.

In some cases this excellent condition of the colonies this spring has resulted in abnormally early swarming, which has somewhat complicated the problem of beginners. When swarming occurs just previous to the main honey flow (in May or early June in the North) there is not time for both divisions to build up to profitable strength for the beginning of the honey flow. In such cases, unless the honey flow is unusually long, the colonies divided by swarming may do poor work in the supers, and it is a good plan to hive the swarm in a new hive placed close beside the parent colony, so that the two divisions may be re-united after the honey flow begins. In such cases all except one of the queen-cells in the parent colony should be destroyed to prevent after-swarming. On the other hand, if swarming occurs several weeks previous to the beginning of the main honey flow, both the swarm and parent colony may recover their strength in time to store surplus honey.

Discouraging Swarming During Honey Flow

The beginner in the North or in any locality in which the main honey flow begins in June, who has been able to coax his bees through the month of May without swarming, and has also been careful to see that none of his colonies have at any time run short of stores, should have his colonies in fine condition at the beginning of the main honey flow. This is the goal toward which all management since last summer has been directed.

However, aside from the fact that the flowers may not yield abundantly or that weather conditions may be unfavorable while they are in bloom, these strong colonies can still fail to store much surplus honey from either of two causes. They may swarm in the midst of the honey flow, and, if not properly handled, this would result in a division of the working force just at the time when the hives should be fairly boiling over with bees. The other condition which sometimes prevents strong colonies from storing a crop of honey even during a good honey flow is that of stagnation of the work of the colony resulting from a lack of room in the supers or some condition which discourages work in the supers.

The bees should be induced to work with full speed in the supers throughout the season without swarming, if possible. As soon as the honey flow begins, and sometimes even before if the colonies become very strong, the entrances should be opened to full size, thus making them ⅞ inch deep by the full width of the hive, and a wide board should be laid on top of the hive to protect the supers from the direct rays of the sun unless the double cover is used. When a shade-board is used it should rest on cleats to provide an air space between the shade-board and the cover. The first super should be given to each colony before the honey flow actually begins. For extracted-honey production a super of empty combs should be given two or three weeks before the honey flow, but for comb honey it is usually best not to put on the first super until about the time the honey flow begins. In the white-clover region it is a good rule to put on the comb-honey supers within ten days after the appearance of the first white clover blossoms. By giving additional supers in the right place at the right time, it is often possible to coax strong colonies through the season without swarming.

It is an excellent plan to examine the brood combs of each colony once a week during the honey flow to look for queen-cells. If queen-cells are found which contain only eggs or small larvae, it is well to destroy them and give the colony another super if needed, since colonies can often be induced to give up swarming in this way. But if the queen-cells are well along, each having a good-sized larva surrounded by royal jelly (white jellylike food), destroying them usually does not cause the bees to give up swarming. Within a few days (about a week after the queen-cells were started) a swarm

may be expected from such colonies if no treatment is given.

Those who are away from home during the day, and therefore can not watch for and hive swarms, can take care of their colonies by the weekly-examination plan and make an artificial swarm when a colony having queen-cells is found. This is done by shaking most of the bees from the combs, either back into their own hive or into a new hive placed where the old one stood and supplied with frames of foundation and one empty comb if any are at hand. It is well to find and cage the queen before shaking the bees from any combs, then release her among the bees of the artificial swarm after the shaking is completed. Two combs should be put back into the parent hive without shaking off any bees, in order that there shall be enough bees in this hive to care for the brood. These should be combs containing the finest queen-cells, and the queen-cells on the combs that have been shaken should be destroyed. The parent hive is then set to one side and managed subsequently as described for the parent colony in handling natural swarms in these talks last month.

Tiering up the Supers

Some seasons a single super will hold all of the surplus honey a colony is able to store. In this case it is better not to give additional supers. During other seasons it may require five or six or even more supers to hold all the surplus the bees can store. If these are not given as fast as needed, a large portion of the crop may be lost for want of room to contain it. Some seasons the honey is stored so slowly that it requires a month for the bees to fill a single super, while during other seasons the honey flow is so rapid that a super is filled within a week or even less. There is also much difference in the way strong colonies work in the supers compared with weak ones. Even during a rapid honey flow it may require a month for a weak colony to fill a single super, while a strong colony would fill it within a week or less.

When the honey flow is slow, or when the colony is weak, the bees usually begin work in the middle of the super, neglecting the outer portion. They may begin work in only a half dozen sections in the middle of a comb-honey super, leaving the foundation unworked in the outside sections. During a slow honey flow, or in the case of weak colonies, the sections in the middle of the super may be filled and sealed before the foundation in the sections at the sides is drawn out. In supers containing extracting combs the bees may fill and seal two or three of the combs in the middle before any honey is put in the outside combs. In such cases, a second super need not be given until the foundation is drawn out in the outer sections of comb honey supers or until new honey is found in the outer combs of extracting supers. In either case the second super should be placed on top of the first one. This is the management either for a slow honey flow or for weak colonies.

During a good honey flow strong colonies should draw out the foundation in the outside sections of comb-honey supers almost as soon as they begin work on the sections in the middle of the super. When they do this the second super should be placed under the first before much honey is stored in it, provided the weather is favorable and the flowers are yielding well. A good rule to follow is to give additional comb-honey supers below the partly finished ones just as fast as the bees will draw out the foundation in all of the sections throughout the supers until toward the close of the honey flow, when the new supers should be placed on top. In extracted-honey production additional supers should be given in each case as soon as the bees begin to store nectar freely in the outside combs of the super last given.

On the other hand, great care should be taken in thus expanding the super room. If the bees are induced to begin work in too many supers the work may not be well finished in any of them. The rapidity of expansion of super work can be regulated largely by the position of each newly-added super, hence the rule to place the empty super under those already on the hive if the bees are storing rapidly and on top if they are storing slowly. During the latter part of the honey flow it is better to crowd the bees by placing the empty super on top in order to have the others better finished.

Beginners should look into the supers every few days during the honey flow in order to note the progress of work therein. At the same time be careful to watch the progress of the blooming-period of the honey plants. Sometimes the honey flow is suddenly either greatly increased or greatly decreased, thus making it necessary to be alert and give more room if the honey flow is increased, or possibly change the position of the supers if it is decreased.

When an empty super is placed on top of the partly finished ones and the bees begin to work in it promptly, it may be placed below the others a few days later if the honey flow is good. On the other hand, when the empty super is placed below the partly finished one and the bees fail to begin working in it within a day or two it should be transferred to the

(Continued on page 400.)

BEES, MEN AND THINGS
(You may find it here)

"My colonies came through the winter 100 per cent this year. I have averaged a little better than 150 pounds of comb honey per colony during the past five years. The season is backward this year. The bees have not had any good of the spring bloom so far, since it has been either too cold or too windy for them to work. But as I have on food-chambers all colonies have plenty of stores to last until the honey flow."—Harold I. Perrin, Custer County, Nebr.

"A friend of mine says that he has never lost a queen in introducing by any method when he kills the old queen and leaves her dead body in the hive. He says he has tried it quite a good many times and that it works. I have always thrown out the old dead queens, but I expect to try this method to see if it works with me."—A. Scaggs, Moultrie County, Ill.

"Our early white honey flow is showing up very well and we are now packing some as fine honey as the state produces. On account of the high quality of this southwest Texas honey it never goes begging, but is readily taken by the dealers and consumers. I can not say yet what the yield will be, but some colonies have already stored 100 pounds."—Grant Anderson, La Salle County, Texas.

"We have had flowers all winter here. Sweet clover has bloomed all winter. One man is pasturing 40 head of cattle on fifteen acres of sweet clover, and the cattle are not keeping it down."—M. B. Tally, Victoria County, Texas.

"Beekeeping teaches us to be ready for the main chance. The profit of the season all comes in a few weeks, and if you are not ready the whole year is a failure. It is the alert man who prospers in any business. The curse of this country is 'I haven't got around to it yet.' "—Dr. John M. Thomas, Middlesex County, N. J.

"Several of my colonies finished up 24 sections of honey before May 1 and were at work on the second supers. This year is one in which the bees are in 100 per cent condition. Furthermore, we expect to get about 5c per pound more for our honey than last year."—C. E. Fowke, Allendale County, S. C.

"Allow me to congratulate you on securing Miss Fischer as editor of your new Food Department. I feel that the beekeepers and their wives will find in this department facts and recipes they have needed."—Mrs. W. W. Foster, Malheur County, Oregon.

"Colonies that were strong and heavy with honey last fall are the same now. Those that were weak and united are weak and a few are dead."—Samuel Cushman, Cook County, Ill.

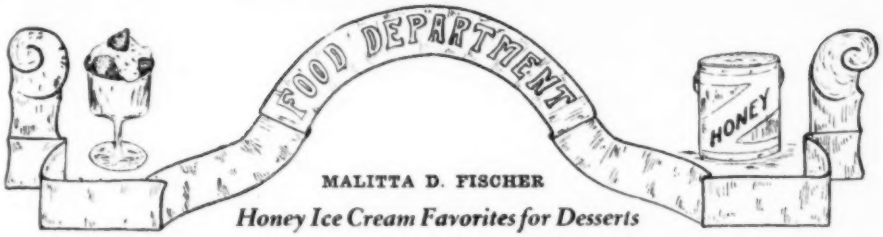
"Thanks to a more thorough inspection of apiaries by county organization work, the brood diseases are on the decline here, and many areas once rotten with disease are now entirely cleaned up. Italian stock is fast taking the place of the native black, and in consequence European foul brood is giving way."—Alfred Soderberg, Bureau County, Ill.

"A new booklet of twelve pages on honey with the slogan, 'A natural provision for sweetness and for health,' pointing out its value as a natural food, has just been issued by the British Columbia Honey Producers' Association. These will be supplied at a nominal price to members of the Association having honey for sale so that they can give them out to their customers, who will no doubt appreciate the numerous recipes the booklet contains, showing how honey can be used to advantage in cooking and preserving fruits, etc."—W. J. Sheppard, Van Couver County, B. C.

"Having practiced the keeping of bees on shares for five years, I have had opportunity to observe the opposite extreme of good beekeeping and know some of the innumerable handicaps one has in handling all kinds of equipment. When rude methods have been employed in a territory for a number of years it is hard for a beginner to succeed if foul brood is present, unless he resorts to out-apiaries, which method I expect to use this year."—Geo. H. Foote, Wood County, Ohio.

"Last fall I filled a number of waxpaper candy sacks with honey fresh from the extractor. I then placed these sacks in a small box in such a way as to force them into the nearest rectangular shape possible and set them away to granulate. The result is that I now have several sacks of as fine candy as one could wish. It is as hard and dry as maple sugar and as portable as a lump of granulated sugar, provided, of course, it is kept away from the heat."—J. H. Sturdevant, Howard County, Nebr.

"A large portion of our honey crop is bulk comb honey produced in shallow frames. The grocer cuts the honey from the frames and wraps it in packages, much as he does bulk lard or pickles. The empty frames are picked up when the next delivery is made."—Claude H. Davis, Clay County, Indiana.



MALITTA D. FISCHER

Honey Ice Cream Favorites for Desserts

When the hot, wilting days of summer come, honey ice cream and honey sundaes are supreme as desserts. Honey ice creams are cooling and healthful—made with Nature's own food-sweet, containing all of its original mineral elements. That's why it is the best foundation for all summer desserts. Even though manufacturers make it under sanitary conditions and of pure materials, you can not obtain real honey ice cream, the kind that has the flavory tang. The only way to have it is to make it yourself. Ice cream, if one has the proper type of freezer, is not difficult to make.

Once having tried honey ice creams, you will readily see why they answer the demands of a perfect dessert again and again. Honey ice creams or ices are not heavy, yet they can display their calories to the shame of many other desserts—and they can be made in such endless variety that they complement any meal. Furthermore, **honey ice cream and honey fresh fruit sundae are two of the very few desserts doctors recommend for children.**

Honey Ice Cream

Two quarts thin cream, 1½ cups clover honey or any delicate-flavored honey. Mix ingredients and freeze.

Honey Chocolate Ice Cream

3 cups milk
3 eggs
1 quart cream
2 squares chocolate
⅛ teaspoonful salt
1½ cups honey

Make a boiled custard of the milk, melted chocolate, honey, eggs, salt, and vanilla. When cool, add the cream and freeze.

Honey Raspberry Sherbet

3 lemons
1¾ cups honey
1 egg well beaten
1½ quarts water
½ pint raspberries

Mix the juice of the lemons, the grated rind of one, the raspberries rubbed through a sieve, and the water, and let stand several hours to blend with honey. Put in a freezer, and when it begins to freeze add stiffly beaten egg white.

Apricot Sherbet

2 quarts milk
1 quart apricots
2 cups honey
2 cups shredded pineapple

Either canned or dried apricots may be used. If the latter, they should be soaked over night in enough water to cover, and next day simmered slowly until tender. After removing from the fire, add 1½ cups honey for every 3 cups apricots used, ½ teaspoonful cinnamon and 2 teaspoonfuls lemon juice. If canned apricots are used, no additional sweetening need be added to fruit. Put apricots through the food chopper and combine with shredded pineapple, using juice of both. Add the honey to the fruit, then the cold milk, stirring constantly. Freeze.

Honey Mousse

Four cups whipped cream, 2 cups honey, 8 eggs. Beat the yolks of the eggs thoroughly and then beat in the honey slowly. Heat gradually until thick, stirring continually. Remove and cool, then add the whites of the eggs that have been whipped to a stiff froth. Next add the whipped cream; blend together. Pack in large quantities of ice and salt and freeze without stirring.

Full-Flavored Sundaes

Under certain circumstances you do not feel that you can make your own ice cream, especially when an unexpected guest drops in for a few hours some warm afternoon. Then, of course, you can send to the corner drug store and buy a quart of ready-made ice cream; but in serving be sure to serve it the honey way.

Honey alone, slightly warmed and poured over either vanilla or chocolate ice cream, makes a delicious sundae. When combined with fruits and nuts, honey provides unusually delightful sundaes, and the following are suggested to give you an attractive variety for summer ice-cream specials.

For each serving allow:

Honey Walnut Sundae—2 tablespoonfuls warm honey and 1 tablespoonful chopped walnuts.

Honey Almond Sundae—2 tablespoonfuls warm honey and 10 salted almonds.

Honey Pecan Sundae—2 tablespoonfuls warm honey and 12 salted pecans.

Honey Cherry Nut Sundae—2 tablespoonfuls warm honey, 3 maraschino cherries cut in strips, 1 teaspoonful chopped nuts.

Honey Pineapple Sundae—2 tablespoonfuls diced pineapple (either fresh or canned) and 3 tablespoonfuls warm honey.

Honey Pineapple Nut Sundae—Same as above, only add 1 teaspoonful chopped nuts to each sundae.

Honey Fruit Sundae—½ tablespoonful each of diced orange, pineapple, strawberry, Queen Anne cherries, bananas, fresh peaches (or any fruit one may have on hand), 3 tablespoonfuls warm honey, 1 tablespoonful honeyed whipped cream.

Honey Banana Nut Sundae—½ banana sliced over ice cream, 2 tablespoonfuls warm honey, 1 teaspoonful chopped nuts.

Honey Malted Milk Sundae—Pour 3 tablespoonfuls warm honey over chocolate ice cream. Sprinkle over this 1 teaspoonful malted milk powder. Ovaltine may be used in the same proportion.

Fresh Strawberry Honey Sundae—3 table-

spoonfuls honey strawberries (as prepared for strawberry short cake in this issue). Top with 1 tablespoonful honeyed whipped cream.

Fresh Peach Honey Sundae—Slice a half peach (nicely ripened) over serving of ice cream. Pour over this 3 tablespoonfuls warm honey and top with 1 tablespoonful honeyed whipped cream.

Honey Marshmallow Sundae—Blend 2 tablespoonfuls of marshmallow creme with two of warm honey. Pour over ice cream, top with chopped nuts.

Bee Buzz—1 ice cream dipper vanilla ice cream and 1 dipper chocolate ice cream. Stick four almonds in vanilla ice cream and 5 pecans in chocolate ice cream. Pour about 1 tablespoonful marshmallow creme (made with honey as given above) and 2 tablespoonfuls warm honey over the chocolate ice cream. Between the vanilla ice cream and chocolate ice cream drop a spoon of honeyed whipped cream; top with strawberry.

Honey Royal Jelly Sundae—3 dates chopped fine, 1 tablespoonful raisins, 1 teaspoonful chopped nuts, 2 maraschino cherries cut in tiny pieces, 4 tablespoonfuls honey. (This mixture should stand a day or two in the honey before using.)

After the Honeymoon, Then What?

Ever since the time that Eros dipped his arrow in honey, the happiest time in a mortal's life has rightly been called the honeymoon. But after the honeymoon, then what? When the bride repeated those solemn little phrases—"For richer for poorer, for better for worse," she had a hidden determination to do her part to make her husband's future **better** and **richer.**

Most men today recognize the profound importance of diet on their efficiency. If a man's health is not tip-top, he can not perform his work properly, and sooner or later he recognizes that his diet is faulty. He wants to correct it and usually the responsibility falls on the wife.

The heat of summer usually takes the edge from most men's appetites. It is more necessary during this time than ever to nourish the system with the body-regulating materials in order to prevent the annoying digestive troubles so frequent during hot weather. Three meals a day with plenty of fruits, vegetables, milk, water, and a minimum of meat or substitute, all served the **honey way,** should not only provide the new husband with good health but plenty of sweetness to keep him good natured.

Start right now to insure his health by giving him honey in his food combinations. Begin with breakfast—many health authorities say it is the important meal. Teach him that a leisurely breakfast is more important to his business future than the few minutes in bed which he gains at the cost of bolting his food down or not eating at all. Check on his luncheon, suggest certain dishes that he will be sure to enjoy and dishes that you know will be good for him. Then prepare a tempting dinner—delicious food, amazing in variety, and providing necessary nourishment. Husbands almost always linger over good dinners. Here are a few suggestive honey-way menus for summer meals:

BREAKFAST
Strawberries a la honey
Honey Corn Flake Gems Oatmeal, Honey
Toasted Bacon
Coffee Milk

Sliced Peaches with Honey and Cream
Ham Toast Whole Wheat Bread
Coffee Honey

LUNCHEON
Chilled Fresh Fruit a la Honey
Tomato and Lettuce Sandwiches
Fresh Lima Beans
Honey Fruit Lemonade
Rhubarb Meringue Pudding*

Sardine Sandwiches
Cucumber, Celery, Radish Salad
New Corn on Cob
Honey Date Nut Bars Honey Ice Cream
Iced Honey Chocolate

DINNER
Lamb Chops, Stuffed Potatoes
Green Peas and Carrots
Toasted Muffins Honey
Cabbage, Pineapple, Celery Salad
Fresh Peach Sundae
Iced Tea

New Corn on Cob
Young Beets Mashed Turnips
Deviled Egg and Onion Salad
Oatmeal Gems, Honey
Fresh Strawberry Short Cake*
Iced Coffee

When the first rhubarb comes in pink and tender, you'll want to make this dessert. It's a delightful variation from the customary rhubarb pie or sauce.

***Rhubarb Meringue Pudding**

¾ cup water	1 cup condensed milk
1 cup rhubarb (fresh stewed)	½ teaspoonful salt
	½ lemon, grated rind
1½ cup bread crumbs	½ cup honey
1 tablespoon butter	5 tablespoonfuls honey
2 eggs	

Soak the bread crumbs in milk and water; add the half cup honey, salt, butter, lemon rind, and egg yolks. Pour into a pudding dish and bake in moderate oven until firm. Cover with the honey-sweetened fresh rhubarb. Make a meringue of the stiffly-beaten egg whites and five tablespoonfuls honey. Heap on top of rhubarb, set in slow oven until a delicate brown.

Honey Strawberry Shortcake

Honey strawberry short cakes are irresistible; that honey tang in combination with the fresh berries leaves a memory that makes other flavors flat by contrast.

3 cups flour	3 tablesp. shortening
1 teaspoonful salt	1 cup milk
3 teaspoonfuls baking powder	3 tablespoonfuls honey
	1 egg beaten very light

Cut shortening into sifted dry ingredients until thoroughly blended. Add to this mixture 1 cup milk which has been thoroughly mixed with one beaten egg and the honey. Roll to about ½ inch thick, cut in rounds 2 inches in diameter. Bake in moderate oven for about 25 minutes. (25 individual short cakes.)

Strawberries for Short Cake

Remove stems from strawberries and thoroughly wash. Use two cups of whole strawberries to 1 cup of mild-flavored honey. Chop the berries, add honey, stir, add pinch of salt. Chill, use 4 tablespoonfuls to each individual short cake. Top with honeyed whipped cream. Strawberries prepared as above are delicious for sundaes and as sauce.

JUST NEWS
Editors

The Agricultural Experiment Station of the University of Wisconsin has published a bulletin entitled "Winter Protection for the Honey Bee Colony." This bulletin was prepared by Prof. H. F. Wilson and V. G. Milum. The bulletin gives the results of exhaustive studies during winter and spring of colonies prepared for winter in different ways. In these studies thermo-couples were used to take temperature readings at various points within the hive during the winter and spring. Some of the colonies studied were in the cellar, while others were packed outside. Tests of various kinds of packing material were made to determine which is most efficient. Tests were also made of colonies taken from the cellar and packed in winter cases in comparison with other colonies not packed.

Arrangements have been made with Dr. Lloyd R. Watson, of Alfred, New York, to give a demonstration of his method of artificially inseminating queen bees on August 10 at the Union Chautauqua of Beekeepers to be held at Hamilton, Ill., on August 9, 10, and 11. Dr. Watson has given this demonstration before several groups of beekeepers and scientists and in each case great interest has been manifested. The Union Chautauqua of Beekeepers is sponsored by the beekeepers of Minnesota, Wisconsin, Illinois, Iowa, and Missouri, and is being held this year at the home of the American Bee Journal, Hamilton, Ill.

The American Honey Producers' League has appointed a committee on honey publicity for each of the ten districts into which the United States is divided under the new constitution. Mr. Clifford Muth, Cincinnati, is general chairman, and the chairmen of the districts are as follows: District No. 1, J. E. Crane, Middlebury, Vt.; District No. 2, E. G. Carr, Pennington, N. J.; District No. 3, E. L. Sechrist, Washington, D. C.; District No. 4, Clay Lyle, A. & M. College, Mississippi; District No. 5, V. G. Milum, Urbana, Ill.; District No. 6, Prof. J. A. Munro, Fargo, N. D.; District No. 7, Clay T. Davis, Cameron, Mo.; District No. 8, F. L. Thomas, College Station, Texas; District No. 9, C. H. Wolf, Greeley, Colo.; District No. 10 Chas. B. Justice, San Diego, Calif. Each sub-chairman is to get together five stories on bees and honey suitable for publication in local papers. The League will then have mimeographed copies of these stories sent to each sub-chairman for distribution among the state leaders of each district. The state leaders are expected to have copies mimeographed and distributed among beekeepers, who are expected to have them published in their local paper.

Mr. Harry Lathrop, who wrote up his foreign travels among beekeepers for a local paper a few years ago, has assembled this material in a book which has just recently been issued. The book is entitled "The Yankee Abroad."

The A B C and X Y Z of Bee Culture has been reproduced in the Russian language, the translation having been made by V. Raykovsky. The illustrations have been reproduced with great faithfulness so that the book on first glance looks very much like the original from which it was copied. The book is published in Russia.

The delegates to the Pan-American Standardization Conference recently held in Washington, D. C., had an opportunity to study the United States standards for comb honey and extracted honey at the Pan American Union Building at Washington on May 10. The operation of the United States standards for comb honey and extracted honey was illustrated by Jas. I. Hambleton by the use of the standard color grader for extracted honey, by samples of extracted honey of the various color grades, and by color prints showing the different grades of comb honey. Circulars were distributed giving facts regarding the standard grades of honey, and stating that the standard color graders are now located at the principal ports in this country as well as in the ports of England and Germany, thus making it convenient for buyers and exporters to use the United States standard grades. Beekeepers and dealers may obtain information concerning the United States grading from the Division of Bee Culture Investigations, Department of Agriculture, Washington, D. C.

Radio Station KMA, Shenandoah, Ia., operating on a wave length of 461.3 meters, is broadcasting weekly programs on the subject of beekeeping. These programs are broadcast every Wednesday between 8:30 and 10:00 A. M., Central Standard time, under the direction of J. L. Haines, Red Oak, Iowa.

The Montana State Beekeepers' Association is publishing for its members "The Montana Honey Flow." The first issue, dated May 1, 1927, contains three mimeographed sheets of information es-

(Continued on page 400.)

GLEANED BY ASKING

Geo. S. Demuth

Swarming Before Queen-Cells Are Capped

Question.—Do bees ordinarily swarm before capping the queen-cells? If so, about how long before? G. C. Petrie.

New York.

Answer.—Italians frequently swarm before any of the queen-cells are capped, but black bees and hybrids usually swarm just after the oldest of the queen-cells have been capped. If the weather is favorable, black bees and hybrids follow this rule almost invariably, but Italians do not. While they may wait until some of the queen-cells are capped, they may swarm several days earlier. During seasons when there is much swarming, an occasional colony of Italians may swarm soon after the queen-cells are started, and many swarm two or three days before the queen-cells are capped. During seasons of moderate swarming most Italian colonies may wait until the cells are ready to seal before swarming.

Great Variation in Yield Per Colony

Question.—Why will a few colonies store 80 to 100 pounds of honey during a poor year, while the rest of the colonies in the apiary do nothing? If the pasture is there for one or two colonies, why not for the rest of them, especially when they all had the same attention and are of the same stock?

New Jersey. Wm. P. Fritz.

Answer.—While all the colonies in a well-managed apiary may appear to be alike at the beginning of the honey flow so far as the strength and the stock are concerned, there is often considerable difference in their condition which can not readily be seen by examining them. During a long honey flow the difference in yield may not be noticeable, but during a short honey flow only those colonies in the proper condition at its beginning are able to make a good showing. At the beginning of the honey flow some colonies may have a large force of hive workers (bees too young for field work) and a small force of field workers, while other colonies may have a large force of field workers and only a moderate number of hive workers, this difference being due to the fact that some colonies reached their peak in brood-rearing a week or ten days earlier than others. If the honey flow should last only ten days the first-described colonies may store no surplus, while the others may store a fair crop, even though the two groups of colonies may have approximately an equal number of bees. Again, some colonies may have reached their peak of brood-rearing much earlier and their large force of field workers may have wasted its energy in a fruitless search for nectar from some minor honey plants so that the field force dies off rapidly at the beginning of the short honey flow. Furthermore, two colonies may be in exactly the same condition so far as the field force and the hive force are concerned, and one may store a good crop of honey while the other stores but little, the difference being brought about by the spirit or energy with which they work. Some condition, such as a rim of sealed honey above the brood in the brood-chamber, or some other condition, may cause one colony to begin work in the supers reluctantly, while the other fairly jumps at the work in the supers. A colony that is thrown out of condition by some little factor in its environment during a short honey flow may go through the season without doing much in the supers, while another colony apparently just like it may work with great enthusiasm and energy during the short honey flow and store a good crop. During a long honey flow such differences would probably not be noticeable since the colonies that were out of condition for a short time may later get back to normal. Unfortunately, not all colonies can be kept in the best condition for storing all the time.

Closing Entrances While Plowing Garden

Question.—Would any harm result from closing the entrance of a colony of bees with a wire screen long enough in the morning to plow a garden adjacent to the colony?

Pennsylvania. S. Eggleston.

Answer.—It will not harm the colony to any extent to close the entrance long enough to plow the garden. Care should be taken to provide ample ventilation so that the colony will not smother. If the colony is very strong it may be advisable to take off the cover and put on a moving-screen on top of the hive. This should be done the evening before so that all that is necessary the next morning is to lift the cover and insert the screen in the entrance.

Teaching Bees to Write and Spell

Question.—I have seen a picture of a shallow frame of honey well sealed on which there were large raised letters that had been traced by the bees. Please state how this is done.

Texas. R. I. Erskine.

Answer.—The raised letters on comb honey may be produced by sawing out the letters from a board about ¼" thick by means of a scroll saw, then fastening this board to another, thus closing one side. This board with the letters cut out is then placed at the side of the frame in which the honey having the raised letters is to be filled. During a good honey flow the cells will be drawn out to greater length to correspond with the letters. Such combs of honey are always attractive at bee and honey exhibits at fairs or in store rooms, especially if the form by

which it was made is shown to explain how the bees were induced to build the raised letters.

Frequency of Examining Colonies

Question.—How often should a hive of bees be opened for inspection during early summer and during the honey flow? L. D. Payne.
Kentucky.

Answer.—Previous to the swarming-season it is not necessary to examine the colonies more than once or twice, espepecially if they are supplied with an abundance of honey and room. In fact, if the colonies have been wintered in two stories with an abundance of honey in the upper story it is not really necessary to examine them until the arrival of the swarming-season. During the swarming-season it is advisable to examine each colony that is liable to swarm at least once every ten days if extracted honey is being produced, and at least every seven days if comb honey is being produced. These examinations are not only for the purpose of looking for queen-cells to see which colonies may need attention in regard to swarming, but also to give additional supers and rearrange those already on the hive if necessary.

Light-Weight Comb Honey

Question.—Last year I had difficulty in obtaining well-filled sections of comb honey. The comb was built so that the cells lacked the depth of average sections. I use the standard equipment, including two-beeway sections and beeway separators. I use full sheets of foundation in the sections. I shall appreciate any information you may give me on this problem.
Indiana. Harold Buscher.

Answer.—A frequent cause of thin combs in sections is a poor honey flow. If the honey flow starts out well so that the combs are built out and well attached to the sections, then tapers off before they are filled, the combs will be thin. Another cause of thin combs is that of giving super room too lavishly. If the supers are tiered up faster than the bees can fill them, they do not build the cells out to full length. This can be remedied by crowding the bees somewhat to cause them to fill the sections more completely. During a slow honey flow it is well to put the empty super on top of the partly filled one, instead of below as is usually recommended for a heavy honey flow. During a poor season or during a slow honey flow it is often impossible to induce the bees to build the cells full length.

Brood Diseases From Wild Bees

Question.—Is there any danger of bees' getting foul brood from wild bees in the timber?
Missouri. E. L. Fleming.

Answer.—It is quite possible for bees to get either American foul brood or European foul brood from bees in the timber. However, since American foul brood spreads slowly when not spread by man, the percentage of diseased colonies in the woods is very small indeed. But there is no reason why an occasional colony in the woods should not pick up the disease somewhere. When such a colony dies and is robbed out by healthy colonies the disease is spread just as it would be in the case of a colony located in an apiary.

Making Increase Without Interfering With the Honey Crop

Question.—Please tell me how I can make increase this year and not lose my honey crop.
Virginia. Joel Burleigh.

Answer.—It is not always possible to make increase without interfering with the honey crop. However, in some locations the main honey flow comes so late in the season that it is possible to divide the colonies in the spring and have both divisions build up in time for the main honey flow. In other localities the main honey flow comes so early that this is not possible. In some portions of Virginia the tulip tree and locust tree furnish the nectar for the main honey flow. These trees bloom quite early, and after this early honey flow there is not much nectar to be had until fall. In such cases colonies can be divided after the early honey flow and both divisions built up for the fall honey flow. In localities having only white clover, increase can be made in July after the honey flow closes and both divisions built up for winter. However, in either case enough honey must be left with each division to carry on brood-rearing sufficient to build up.

Use of Entrance-Guards

Question.—Will it be all right to put on an entrance-guard and leave it on from early spring until after the swarming season? Our idea is to add supers and have the bees make honey instead of swarming if this can be accomplished by putting on an entrance-guard.
Ohio. M. L. Phillips.

Answer.—The entrance-guard does not prevent swarming. It prevents the queen from going out with the swarm, which will result in the swarm's returning to the hive unless it unites with another swarm that may happen to be out at the same time and which may have a queen. After the swarm returns the colony does not give up swarming. A day or two later another attempt will be made and after two or three attempts the bees will kill the old queen. They then wait until one of the young queens emerges, when the colony will again attempt to swarm, the swarm sometimes coming out every day for a week or more. So much swarming often completely demoralizes the work of the colony and results in great loss, especially during a good honey flow. Both the entrance-guard and the queen-and-drone trap are useful in preventing the escape of a swarm when the beekeeper is away from home. Neither should be put on the hive until about the time a swarm is expected, and either should be taken off as soon as the colony has swarmed and the swarm has been cared for.

A. I. Root's Story of His Own Life

Wine is a mocker, strong drink is raging: and whosoever is deceived thereby is not wise.—Prov. 20:1.

In 1878 there were a number of saloons in Medina, and some of my employees sometimes got intoxicated. In spite of temperance lectures and all that Christian people had done, the evil seemed on the increase. At one of our Sunday evening prayer meetings the matter was mentioned and I suggested that we talk with the saloon-keepers in regard to the matter and see what the power of kindness might do. Who would do it? Almost before I thought, I volunteered to take upon myself the task. When Sunday morning came and I thought of what I had promised to do I caught myself trying to think of some excuse whereby I might evade the duty. However, after praying for guidance I started out about half past eight in the morning.

When the first saloon-keeper talked kindly and pleasantly and promised to give up selling beer entirely if I would secure him boarders enough so he could pay his rent, besides promising to keep doors closed on the Sabbath any way, I felt almost astonished to think my prayer had been so fully answered. I was treated courteously at every place, and in two places they gave me kind invitations to call again whenever I saw or heard of anything disorderly about their establishments.

At the second place (and the one I felt the most inclined to pass by without calling) I was met by a singular request from the old woman who kept the establishment. As soon as she found out who I was she took me by the hand and plead most earnestly that I would do something to save her son from a drunkard's grave and from the delirium tremens. She, a saloon-keeper, pleading that I would save her son, who was also a saloon-keeper in a neighboring town! How inconsistent is humanity! I pointed out her duty as well as I could and promised to help him if possible. She told me that he lived in Abbeyville and that he spent most of his time on Sunday at the brewery which had been recently started up again. It began to dawn on my mind that I had better get a little outside of that brick schoolhouse where I had been holding the mission Sabbath school and go over to the brewery, less than a quarter of a mile distant.

The Visit at the the Brewery

The boy's home proved to be a very sad-looking place indeed. I inquired for the brewery and was directed down a by-street and up a lane. Out of sight under a hill I found the old dilapidated-looking building. On walking up the steps and opening a door into the part where I heard many voices and the clinking of glasses I found some of the scholars I had been missing at the Sabbath school, and as I took them kindly by the hand I felt that perhaps I had more need to feel ashamed than they. In the center of the room sat a person who seemed to be the leader. I could not see his face ot first, but I soon found that it was Simon, the son of the old woman with whom I had talked. I had known him a few years before, but now his face was so changed, so bloated and red, and his eyes so glassy, that I hardly recognized him.

The former dislike I had felt to entering such a place and such a crowd was all gone. I was not even in the least embarrassed. I felt that God was with me and that it was my right and my duty to admonish them that it was the Sabbath day. I talked with them pleasantly, and poor Simon, even though under the influence of beer, told how he had gone down and down until he had lost all hope. He admitted that beer was killing him and appealed to some of his comrades, who were attempting a defense of it, if it were not true that he ought not to drink. Not one was present who did not say it was killing him, and then he almost piteously asked them why they had so often urged him to drink, and why they could not let him remain a sober man.

I also talked with the brewer himself, a thin, slim-looking young man, who tried to evade me. He was not making very much money in his business of poisoning his fellows, and his wretched hovel seemed but poor pay in the barter for human souls. He, too, showed that better feelings lurked hidden in his heart. But, with that strange perversity of humanity, before I left they again passed the beer to Simon. This time he told them that, with God's help, he was going to be a man yet, if he could. He begged for a humble place in my employ that he might be out of the way of temptation, and get

some encouragement from the boys who had reformed and who were then working for me.

Clearing Streets of Drunkenness

That same year I was put on a committee which my means of law was to suppress drunkenness in our streets. It seemed an easy matter to promise to do this work, but when I took a second thought about it and reflected that the ones I should cause to be arrested would probably meet me in jail in the Bible class I hung back because I could not see my way clear to do mission work and undertake prosecution at the same time.

A prominent and otherwise good citizen had for years been in the habit of appearing intoxicated on our streets; and many times the boys in jail referred to him as one that no one dared arrest, though they were taken up for the first offense. This man bought his whisky by the barrel and boasted that it was no one's business so long as he in no way interfered with any one else. I called at his house on Sunday morning after the Bible class and had a long and friendly talk with him, concluding by telling him I should be obliged to have him arrested if he was seen any more in this condition on the street. Although we had some pretty plain talk, I left with permission to arrest him for the next offense, and a promise, too, that he would harbor no malice if I did.

Months past and he did a great deal better, but slowly he got back into his old course. I saw him intoxicated several times, but so dreaded to mar the harmony of our town that, notwithstanding my plain and decided warning, I let it pass. Finally, however, one day when he was being helped along the street by one of his comrades, he tried to walk alone and came so near running over a little girl that I put away my scruples, had him arrested and fined with a severe rebuke and a reminder that for the next similar offence he would go to jail without ceremony. Did I do right?

He threatened me, of course, and finally in a later talk told of being so short of money that it was with difficulty that he could raise the fine, and that his family was thereby deprived of the necessaries of life. He said I had always been a peaceable man and that he had never known of my having a quarrel before, and that I certainly had hurt myself in the opinion of all good people by thus pouncing on a hard-working man. I plead with him, pointing out the effect of such an example on his own boys, until he finally shook hands and forgave it all, but warned me never to have him arrested again. I took his hand, but earnestly assured him that I should fetch him to justice for the very next offense. This was the first time in my life I ever had anything to do with the law.

Soon after this I drove over to see a man living near Strongsville who was frequently seen on our streets intoxicated.

"Mr. B, I have come to see you on a strange errand. After I have stated it, if you wish me to go away I will go at once without blaming you in the least, for I have come here to take a great liberty."

He bowed his head but made no answer. I then went on. I told him of the boys in our town, of the example he was setting before them. He said he knew it all and was glad I had come. Said he had been thinking on that pleasant Sabbath afternoon that if he continued thus he would soon be past hope or help, that his property, too, could not hold out long against such wastefulness. He told me how again and again he had come to our town thinking he would keep away from the saloons and drink no more, how he had been drawn in and treated under one pretext or another, how they had wanted to buy his fruit and had insisted on his coming in to see it weighed, and how he had yielded and come home in a state of insensibility with his money all gone, and his hope and self-respect with it.

"No one ever talked with me before as you have, Mr. Root, and I am very glad that you came."

It seems that the saloon-keepers had not only got his fruit when he was so drunk that he did not know that they never paid him, but moreover they even borrowed his money and he never knew where it went until a bystander later informed him after he became sober.

Soon after this he was converted, and one of his first acts was to prosecute by law every saloon-keeper who had sold him drink while thus intoxicated. The minister and I went with him to the courthouse where the grand jury was in session and he told his story before them. It implicated every saloon-keeper in town, and, although they had the very best counsel that could be secured, for once in the world everything seemed to be against them. None of the usual twists and subterfuges seemed to avail a particle, and in the panic of alarm the two leading saloon-keepers sold out in haste and left town. The old woman who had sold the man the drugged liquor (the one who had begged me to save her son Simon) unexpectedly locked up her shop and disappeared, no one knew where. Another saloon-keeper was heavily fined, and afterward was most emphatic in his de-

(Continued on page 397.)

Classified Advertisements

Notices will be inserted in the classified columns for 7c per word. You must say you want your advertisement in the classified columns, or we will not be responsible for errors. For special conditions on bee and queen advertising please write us. Copy should be received by 15th of preceding month to insure insertion. Cash with copy if credit has not been established previously.

REGULAR ADVERTISERS DISCONTINUED IN GOOD STANDING

L. J. Bond, Capital Candy School, Inc., Colorado Honey Producers' Association, Diamond Match Company, H. E. Graham, Theo. Hackbarth, J. N. Harris, Edw. Hassinger, Jr., Jos. H. Hoehn, W. A. Holmberg, L. C. House, Geo. A. Hummer & Son, W. X. Johnston, Lewis O. Kiaty, Loviett Honey Co., J. F. Moore, H. D. Murry, T. A. Plauche, Homer W. Richard, John St. Romain, The Dr. Shaw Apiaries, Shaw & Ramsey, N. L. Stapleton, R. V. Stearns, Superior Honey Co., Van Wyngarden Bros., M. Voinche, Joe Wadleigh.

(Temporary advertisers and advertisers of small lots, when discontinued, are not here listed. It is only regular advertisers of regular lines who are here listed when their advertisements are discontinued when they are in good standing.)

HONEY FOR SALE

FOR SALE—Extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

FOR SALE—Extracted honey, clover, and buckwheat. C. N. Ballard, Valois, N. Y.

CARLOAD Michigan light extracted honey, 10c per lb. L. S. Griggs, 711 Avon St., Flint, Mich.

WINKLER'S choice clover honey. Write for June closing-out prices. Edw. A. Winkler, Joliet, Ill.

15 cases extracted clover honey. Finest obtainable. 10c lb., f. o. b. here. Appeldoorn, Hamler, Ohio.

FOR SALE—Water white sweet clover honey. North Dakota's best. Victor Apiaries, Chaffee, N. D.

HONEY FOR SALE, any kind, any quantity. The John G. Paton Co., 217 Broadway, New York City.

FOR SALE—White clover honey in 60-lb. cans, two to the case. D. R. Townsend, Northstar, Mich.

FOR SALE—Clover honey in new 60-pound tins. Also buckwheat. N. L. Stevens, Venice Center, N. Y.

EXTRACTED HONEY FOR SALE—Clover, buckwheat, any kind of package. C. J. Baldridge, Kendaia, N. Y.

FINE, well-ripened clover honey in new 60-lb. cans, two in box. Prices on request. Dr. C. G. Luft, Fremont, Ohio.

FOR SALE—Choice white and light amber Michigan extracted honey in NEW 60-lb. cans, case or carload. Sample, 15c. David Running, Filion, Mich.

FOR SALE—Comb and extracted white clover honey. Price on request. Dr. E. Kohn & Son, Grover Hill, Ohio.

HONEY FOR SALE—All grades, any quantity. H. & S. Honey & Wax Company, Inc., 265-267 Greenwich St., New York City.

WATSON'S choice Nebraska clover extracted 60's for sale. Write for prices. Sample, 10c. Albert W. Watson, Wayne, Nebr.

BUCKWHEAT-GOLDENROD honey of best quality, in five and sixty pound tins. Price reasonable. H. E. Crowther, Jefferson, Ohio.

FOR SALE—White clover honey in 60-lb. cans at 10c per pound, f. o. b. Brimley, Michigan. The Stover Apiaries, Tibbee Station, Miss.

FOR SALE—Finest quality clover honey in new 60-lb. cans and cases, case or carload. Write for prices, stating quantity desired. J. D. Beals, Dwight, N. D.

TO make room for our new crop we will sacrifice on a carload of our best clover extracted honey. New cans and cases. E. D. Townsend & Sons, Northstar, Michigan.

"STURDEVANT'S NEBRASKA CLOVER HONEY," white, extracted, sixties, Rochester, N. Y., Boston, Mass., home apiaries. Bids solicited. J. H. Sturdevant, St. Paul, Nebr.

HONEY FOR SALE—For the beekeeper honey sellers whose supply may be short, we have choice honeys that we offer. Write for prices. The A. I. Root Company, Medina, Ohio.

HONEY FOR SALE in 60-lb. tins. White clover at 12c lb.; white sage at 12c lb.; white orange at 13c lb.; extra L. A. sage at 11c lb. Hoffman & Hauck, Inc., Ozone Park, N. Y.

HONEY FOR SALE—Buckwheat-clover, delicious, mild flavor, but dark color. New 60-lb. cans net, $5.50 each; $10.50 per case of two, f. o. b. here. Adams & Myers, Ransomville, N. Y.

FOR SALE—Ohio white clover honey, $12.00 for single case two 60-lb. cans; in 10-case lots, $10.80 per case; 12 5-lb. pails, $8.00. Chunk honey, 12 5-lb. pails, $10.00. Sample, 15c. F. W. Summerfield, Waterville, Ohio.

TUPELO extracted honey, unheated, no granulation. Retains delicate fragrance and aroma. 20c for sample of barrel and car lots. Parcel post packages delivered, ½ gallon, $1.95; 1 gallon, $3.75. M. L. Nisbet & Bro., Bainbridge, Georgia.

FOR SALE—Large stock first-class white clover, sweet clover, basswood, light amber and buckwheat extracted honey. Producers who need more, dealers and solicitors should write us about their wants. A. I. Root Company of Chicago, 224 W. Huron St., Chicago, Ill.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTE—All our honey-producing friends should take note of the following from the "Guarantee and Advertising Conditions" of Gleanings in Bee Culture: "We will not guarantee any honey buyer's financial responsibility and advise all beekeepers to sell for cash only or on C. O. D. terms except when the buyer has thoroughly established his credit with the seller."

WANTED—Fancy white-clover comb. E. W. Peirce Co., Zanesville, Ohio.

BEESWAX WANTED — Highest market prices paid. Cash or in exchange for supplies. Write us for quotation before shipping elsewhere. The A. I. Root Co., Medina, Ohio.

WANTED—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5c a pound for wax rendered. The Fred W. Muth Co., Pearl and Walnut Sts., Cincinnati, Ohio.

FOR SALE

FOR SALE—Damaged sugar for bee feeding. Winkler Honey Co., Joliet, Ill.

FOR SALE—Good second-hand bee hives. Merle Walradt, Ashville, N. Y.

HONEY LABELS—New design. Catalog free. Eastern Label Co., Clintonville, Conn.

MAKE queen introduction SURE. One SAFIN cage by mail, 25c; five for $1.00. Allen Latham, Norwichtown, Conn.

FOR SALE—The Simplicity extractor. For price, write the Ontario Beekeepers' Supply House, Guelph, Ont., Canada.

FOR SALE—Big sale of high quality bee supplies now on. Send for flyer. The Stover Apiaries, Tibbee Station, Miss.

FOR SALE—Bee equipment complete for 60 colonies. Location near Albany, Oregon. Mrs. W. J. Smith, Rt. 1, Box 11A, Medford, Oregon.

BEE SUPPLIES—Hive bodies, 75c each. Covers and bottoms, 50c each. Other bargains. Valley Bee & Honey Co., Box 703, Weslaco, Texas.

OWING to slight changes in management we offer a large list of new and used bee supplies. All bargains. Write for list. Winkler Honey Co., Joliet, Ill.

ROBINSON'S comb foundation will please the bees, and the price will please the beekeeper. Wax worked at lowest rates. E. S. Robinson, Mayville, N. Y.

ROOT bee supplies and a new moth-killer, more efficient than carbon bisulphide and will not explode. $3.00 per gallon; $2.00 per half gallon. A. V. Small, Augusta, Kans.

FOR SALE—100 lbs. Falconer light brood foundation at 60c; one 10-inch foundation mill, one Hershiser wax press, one Root-Hatch wax press without screw. Spencer Baird, Fayetteville, N. Y.

FOR SALE—Good second-hand 60-lb. cans, two cans to a case, boxed. We have large stocks of these on hand. Please write for prices if interested. We are offering only good cans and good cases. C. H. W. Weber & Co., Cincinnati, Ohio.

BEES AND QUEENS FOR SALE

WHOLE colonies of bees, if advertised for sale in these columns, must either be guaranteed free from disease, or, if not so guaranteed, the exact condition of the bees and the conditions of sale must be clearly stated in the advertisement; or, it will be satisfactory if the advertiser will agree to furnish a certificate of health from some authorized bee inspector at time of sale.

FINEST ITALIAN QUEENS, $1.00 each. Wm. R. Stephens, Wingate, Indiana.

QUEENS and package bees, "Yancey Hustlers." Caney Valley Apiaries, Bay City, Tex.

FOR SALE—Bees, Hives, Supers. Health certificate. R. Hibbard, 131 Benedict St., Watertown, N. Y.

FOR SALE—TWIN-DEL queens and Root Quality beekeepers' supplies. W. G. Lauver, Middletown, Pa.

PACKAGE BEES—See larger ad on page 398, or write for prices. John A. Williams, Box 178, Oakdale, La.

FINE three-banded queens. Just the kind you will want. Now, 75c each, any number. G. H. Merrill, Greenville, R. F. D., No. 7, S. Car.

LEATHER-COLORED Italian queens, $2.00 until June 1; after, $1.00; tested, $2.00. A. W. Yates, 15 Chapman St., Hartford, Conn.

GOLDEN Italian queens, 1, $1.00; 6, $5.00; 12, $10.00; $75.00 per 100. Write for price on package bees. T. J. Talley, R. F. D. No. 3, Greenville, Ala.

GOLDEN ITALIAN QUEENS AND BEES—1 queen, $1.00; 6, $5.00; 100, $75.00. Price on bees on request. Queens bred for business. Try them and be convinced. Sam Foley, Greenville, Ala.

PACKAGE BEES. None better. Van's Honey Farms, Hebron, Indiana.

FINEST ITALIAN QUEENS, $1.00 each Wm. R. Stephens, Wingate, Indiana.

PACKAGE bees and queens. Best and cheapest. See page 403. The Stover Apiaries, Tibbee Station, Miss.

PACKAGE BEES. See large ad on page 398, or write The Crowville Apiaries, J. J. Scott, Prop., Crowville, La.

ALABAMA queens, bright Italians, 1, $1.00; 6, $5.00; 12, $10,000; $75.00 per 100. Write for price on package bees. H. B. Talley, R. F. D. No. 4, Greenville, Ala.

GOLDEN Italian queens, ready April 1. 1 queen, $1.00; 6, $5.00; 12, $10.00; 100, $75. Safe arrival guaranteed. W. W. Talley, Greenville, R. F. D. No. 4, Ala.

GOLDEN Italian queens, producing large beautiful bees, solid yellow to tip. Package bees, nuclei, circular, 1927, ready free. Dr. White Bee Co., Sandia, Texas.

KANSAS bright Italian queens. A. M. Hunt's strain. Gentle and hustlers in Diemer cages. Select untested, $1.00 each. Tested, $2.00 each. C. W. Ward, Route 1, LeRoy, Kansas.

$1.00 per lb. for three-banded, leather-colored Italian bees in combless packages. Can furnish nuclei and tested queens. For particulars, write. Dr. Stiles, P. O. Box 422, Houston, Texas.

ITALIAN QUEENS—Untested, 1 to 10, $1; 10 to 25, 85c. Write for prices on larger quantities and on combless package bees. Louisiana Southern Bee Farm, R. F. D. No. 2, Baton Rouge, La.

VIGOROUS LEATHER-COLORED ITALIAN QUEENS. $1.00 each. Prompt and courteous service. Wm. R. Stephens, Wingate, Indiana.

FOR SALE—Two-pound package Italian bees with select untested queen, $3.00. All bees shipped with health certificate attached. The Mangham Apiaries Co., C. S. Duncan, Prop., Mangham, La.

GOLDEN Italian queens for sale. 1, $1.00; 6, $5.00; 12, $10.00; 100, $75.00. Package bees in season. 20 per cent to book your order for spring delivery. J. F. Rogers, Greenville, R. F. D. No. 3, Ala.

"SHE-SUITS-ME" queens, 3-banded stock, none better. Untested queens from May 15 to June 15, $2.00. After June 15, $1.50. Introduction guaranteed. Circular. Allen Latham, Norwichtown, Conn.

THREE-FRAME nucleus with selected untested queen, $3.50 each. For June delivery. Government health certificate with each shipment. Safe delivery guaranteed. Central Louisiana Apiaries, Hamburg, La.

BEES and three-banded Italian queen. Two-lb. package bees, with queen, $3.50. Can ship on comb or sugar syrup. Health certificate. 10 per cent books order. Write for special prices. C. E. Carpenter, Bunkie, La.

THREE-BAND Italian bees and queens. 2-lb. pkgs. with select untested queen, 4.50; 3-lb. pkg. with select untested queen, $5.50. Untested queens, $1.00; $10.00 per doz. Tested queens, $1.50. J. Allen, Catherine, Ala.

PURE ITALIAN QUEENS—Untested, $1.00; tested, $1.50; 2-lb. package, $3.00. Add price of queen wanted. Safe arrival guaranteed after May 10. Write for prices on colonies. Birdie M. Hartle, 924 Pleasant St., Reynoldsville, Pa.

SATISFACTION is great. Yet our three-banded Italian bees and queens satisfy the best beekeepers. We guarantee satisfaction when you order from us. Package bees a specialty. Write for prices. The Shoffner Apiaries, Liberty, N. C.

VIGOROUS LEATHER-COLORED ITALIAN QUEENS, $1.00 each. Prompt and courteous service. Wm. R. Stephens, Wingate, Indiana.

MACK'S FINE LARGE YELLOW QUEENS are guaranteed for two seasons' satisfactory service. Ready June 15. Price, $1.00 each, $10.00 dozen. Herman McConnell (The Bee and Honey Man), Robinson, Ill.

LISTEN—Do you like to be disappointed? If not, place your orders with us for high-grade Italian bees and queens. Satisfaction guaranteed. Write for circular and price list. Carolina Bee Company, W. O. Curtis, Manager, Graham, N. C.

BUY from shipper farthest north. Hardy stock, three-band Italians for spring delivery. Three-frame nuclei and tested queen, $5.00 each. No disease. Twenty years' experience. S. G. Crocker, Jr., Roland Park P. O. Baltimore, Md.

AFTER 38 years of selection in breeding a fine strain of leather-colored Italian queens, I am offering them after June 15 at $1.00 each in any quantity. Freedom from disease guaranteed. Charles Stewart, Johnstown, Box 42, New York.

HOLLOPETER'S STRAIN three-banded Italians reared on the summit of the Alleghenies, are unexcelled as honey-gatherers. Untested queens ready June 1, $1.00 each. J. B. Hollopeter, Rockton, Pa. (Commercial queen-breeder from 1911.)

REQUEEN your bees with the best young queens. We have them. Queens, 75c each; $9.00 per dozen; 1 lb. of bees with queen, $2.90; 2 lbs. with young queen, $4.50. Charges paid to your P. O. Graydon Bros., Greenville, R. F. D. No. 4, Ala.

GOLDEN Italian queens that produce golden bees, very gentle, good honey-gatherers. State inspected. Safe arrival, satisfaction guaranteed. Untested, $1.00; 6 for $5.40; 12 or more, 80c each; tested, $1.50. Select tested, $2.50. D. T. Gaster, Randleman, N. C.

THREE-BANDED Italian queens and bees, gentle and good honey-gatherers. 1, $1.00; 6, $5.00; 12, $10.00. Package bees, 2-lb. pkg. with untested queen, $3.25; 3-lb. with untested queen, $4.25. Safe arrival and satisfaction guaranteed. G. E. Whittle, Mussel, Ala.

GOLDEN Italian queens that have the other qualities desired in bees as well as the golden color. Prices: untested, $1.05; 6, $5.50; 12 to 49, 80c each; 50 or more, 75c each, with health certificate and safe arrival. Hazel V. Bonkemeyer, Route 2, Randleman, N. C.

FOR SALE—Choice three-banded Italian queens, producing bees that are gentle and good hustlers. Price, untested, $1.00 each; 6, $5.50; 12, $10.00; 13 to 49, 80c each; 50 or more, 70c each. State inspected, safe arrival, and satisfaction guaranteed. Carl E. Causey, Pleasant Garden, N. C.

GOLDEN Italian tested queens, $2.00 each; 2-lb. Italian bees, with untested queen, on one frame of honey, $3.50; 3-lb. of bees with one untested queen on 2 frames of emerging brood and honey, $6.00. Over five packages, $5.50. A health certificate accompanies each shipment U. O. Bordelon, Hamburg, La.

WIRE, don't write, if in a hurry. Rush orders solicited for queens and package bees. We produce the best and sell for reasonable prices. Pure golden stock, gentle, phenomenal producers. NOT AFFECTED BY MISSISSIPPI FLOOD. The Spencer Bee Farms, Orleans Parkway, R. F. D. No. 2, New Orleans, La.

FOR SALE—Choice bright Italian queens. I have been building up this strain for the last 24 years for vigorous hustlers, good winterers, gentleness and fine color. These queens will equal the best on the market. Health certificate goes with the queens. Prices: 1 untested queen, $1.25; 12 untested queens, $12.00; 1 breeder, $10.00. Emil W. Gutekunst, Colden, N. Y.

GOLDEN Italian queens and nuclei (or package bees) for 1927. The big, bright, hustling kind (the kind that gets the honey). Satisfied customers everywhere. Untested, $1.00 each; 6 for $5.00; 12, $10.00; 100, $75.00. Tested, $2.00 each; 2-frame nucleus or 2-pound package with queens, $4.50 each; 10 or more, $4.00 each. Safe arrival guaranteed. Health certificate furnished. E. F. Day, Honoraville, Ala.

THREE-banded Italian queens of high quality for the season of 1927. Begin shipping June 1. These queens are reared under the best conditions possible that time and experience can produce. 1 untested queen, $1.00; six, $5.50; twelve, $10.00; tested queens, $2.00 each. For queens in larger quantities write for prices. All bees free from disease. Safe arrival and satisfaction guaranteed. Robert B. Spicer, Wharton, N. J.

FOR SALE—Beekeeper's home, near City Park. Modern five-room house, electricity, gas, city water, steam heat, one acre ground, fruit, berries, good barn, large poultry house, garage. Extracting house, one honey extractor and one honey tank. 26 colonies bees, Modified-Dadant hives. Extracting super for each hive and extracting equipment new in 1926. Bees strong, no disease. Plenty alfalfa and basswood. $5500—$3000 cash, balance five year's time. Homer Johnson, R. F. D. No. 6, Salem, Ohio.

SAY, DO YOU WANT THOSE BEES ON TIME? They are ready now. And they are not cheap stuff like you can buy, but as good as money can buy. I will ship as near the day you want them as the next one. Don't wait until the day you want them, then wire, as many did last year. I will send you three full pounds of bees, one good Italian queen, for $4.50 with syrup feed. Or on frame of honey and brood just as you like; 3 pounds bees, 2 frames brood, $5.25; 4-pound package, $5.25. All bees shipped on comb with queens introduced unless ordered otherwise. F. M. Morgan, Hamburg, La.

ITALIAN bees and queens—Honey Girl strain—2 lbs. bees with queen, $3.50 per pkg.; 10 to 24 pkgs., $3.35 each; 25 or more, $3.25 each; 3 lbs. bees with queen, $4.25 per pkg.; 10 to 24 pkgs., $4.10 each; 25 or more, $4.00 each; 4 lbs. bees with queen, $5.25 per pkg.; 10 to 24 pkgs., $5.10 each; 25 or more, $5.00 each. Queens for June and July delivery, untested, 1, 90c; 10, $8.00; 25, $18.75. Safe delivery guaranteed. 15 per cent books your order. Balance before shipping date. Guaranteed safe arrival, subject to bad-order receipt. Certificate of inspection with each shipment. Mayeux Bee Co., Hamburg, La.

EARLY PACKAGE BEES and HIGHEST GRADE ITALIAN QUEENS. Our only business is BEES and QUEENS. We do not purchase honey, deal in supplies, or sell off a few old bees in the spring as a side-line. Our colonies are worked exclusively for the production of young, vigorous, healthy worker bees for packages. Colonies are drawn on about every two weeks from March 20 to June 20. Two and three pound packages, 50 pounds or more, $1.00 per pound. Select three-banded Italian queens, $1.00 each. 10 per cent deposit will book order and reserve shipping date. Large orders booked in advance will receive special prices. We guarantee both safe arrival and satisfaction. J. E. Wing, Cottonwood, Calif. Most NORTHERN BREEDER in California.

EXCHANGE

WANTED—To exchange package bees or queens for foundation. Valley Bee & Honey Co., Box 703, Weslaco, Texas.

HELP WANTED

WANTED—Young man assist in extracted-honey production. Hofman Apiaries, Janesville, Minn.

WANTED—Young man with some bee experience for balance of season. N. L. Stevens, Venice Center, N. Y.

MISCELLANEOUS

WANTED—Two or four frame reversible extractor. Must be cheap, good condition, not over 500 miles from Boston. Want colonies bees cheap, no A. F. B. and in Massachusetts. Francis Devereux, Green Harbor, Mass.

THE BEE WORLD—The leading bee journal in Britain and the only international bee-review in existence. It is read, re-read and treasured. Will it not appeal to you? Specimen copy free from the publishers. Send us a post-card today. It is well worth your little trouble. The Apis Club, Benson, Oxon, England.

ROOT EXTRACTOR EXCHANGE COLUMN

(A free advertising service to Root customers who wish to dispose of their present extractors as they are purchasing Root machines of greater capacity.)

FOR SALE—One 4-frame Root automatic reversible hand-power extractor, 9⅝-inch pockets. In excellent condition. Price $35.00. Wm. J. Martin, Croswell, Mich.

ONE Root 2-frame reversible honey extractor in good condition, ready to extract honey, $20, f. o. b. L. M. Hubbard, Onsted, Mich.

FOR SALE—Two four-frame Lewis-Markle reversible extractors, in good condition, and one four-frame Root multiple reversing hand extractor in fine condition, formerly called the automatic. Cloverdale Apiaries, Manhattan, Mont.

TOO LATE TO CLASSIFY

HONEY—Be your order large or small, we ship promptly. Dakota Sunshine Apiaries, Amenia, North Dakota.

60-lb. Cans

BARGAIN PRICES. Here is a bargain in second-hand and new 60-lb. cans. SELECTED SECOND-HAND CANS and cases, in quantities of 10 to 49 cases, 30c per case of 2 cans; 50 cases and over, 25c per case of 2 cans. All cans cleaned on outside. SELECTED CLEANED SECOND-HAND CANS and cases in quantities of 10 to 49 cases, 35c per case of 2 cans; 50 cases and over, 30c per case of 2 cans. All cans cleaned inside and outside. Thoroughly dried inside to prevent rust. NEW CANS IN USED CASES, cases having been carefully reconditioned, 10 to 49 cases, 90c per case of 2 cans; 50 cases and over, 85c per case of 2 cans; in carlots, 80c per case of 2 cans. Prices subject to stocks on hand.

THE A. I. ROOT COMPANY, MEDINA, OHIO.

A. I. ROOT'S STORY OF HIS OWN LIFE.

(Continued from page 393.)

nunciations of myself and the minister for having caused innocent people so much trouble and expense.

About this time "Simon" stopped me in the street and informed me that my Abbeyville Sunday school would be closed up if I did not stop advising people to take the law on saloon-keepers. He said I had done him a great deal of good by my pleasant talk, but if I wanted to bring peace and good will among men I had no business with the law in my hand. He was trustee of the schoolhouse and unless I withdrew at once from my offensive position, the building would be locked up.

Many times in life the very shortest road to peace and good will is not only through the law but by the use of the sword itself. Through the influence of my mission work this man's mother had been obliged to flee the community as an outlaw. Was the work mine? By no means. When you put a quantity of fuel under the boiler of a steam engine and stir up a rousing fire no immediate effect is seen in the machinery, and an inexperienced person might not see the connection between the firing up and the vast amount of work that would soon be performed through the agency of that little heap of fuel.

Was the Sabbath school shut up? Simon and his father went there and told the children that they had better go home as I was not coming, but the children's faith in me prevailed. I persuaded Simon to come in and sit in a class. When the school was over he went out and got one of the largest apples I ever saw and told me to give it to my wife with his respects. The Sabbath school was God's work, and it would have been a pretty hard job for a human being to break it up.

When I first called on that man near Strongsville I expected to be received pleasantly and I hoped that the man might in time be converted; but I had no thought that he would that night give his heart to God, and much less that his conversion would have such an effect on the saloons and morals of Medina. The lawyer for the defense said that I went off ten miles that Sunday night with the express idea of making trouble, but the trouble that came was purely of God's making and not of mine. I have faith in God and faith in prayer. God planned and directed my work for me, even though I myself could not look ahead and see the results.

ORDER YOUR LABELS NOW.
WE CAN GIVE YOU GOOD SERVICE.
THE A. I. ROOT CO., MEDINA, OHIO.

Townsend-Camos Bulletin No. 34

In offering ARISTOCRAT Queens for sale during the season of 1927, we wish to repeat that ARISTOCRAT queens are the product of all the best breeding queens advertised for forty years by the J. P. H. Shaw & Co., Loreauville, La., we having bought their entire lot of bees and good will; and in the future they will be known as the ARISTOCRAT stock, instead of advertising them as the original Shaw stock, as we did in the start. Note that you will have to buy ARISTOCRAT stock to get the old original J. P. H. Shaw & Co. stock of bees and queens. This stock of bees is so well known that no testimonials need be published, but we have one so good that we can not resist the temptation to mention it. You all know Mr. A. C. Allen, of Portage, Wis., for ten years judge of the bee and honey department of the Wisconsin State Fair, and one of Wisconsin's best-known beekeepers. Note what he says under date of June 10, 1926: "The breeder I got of you two years ago was as good a queen as I ever owned." We have many others in the same tone, but space forbids our mentioning them at this time. We will add, though, that we furnish the Minn. State Farm with their breeding stock each spring. You will recognize Prof. Francis Jager as superintendent of the bee department of this farm. Need we say more about this ARISTOCRAT strain of three-banded Italian bees? Note our low price for this season on untested queens: we quote one to five at 80c each; six to ten at 75c each; eleven to twenty-five, at 70c each; twenty-six to fifty, at 65c each. One hundred for $60.00. While our queen-rearing yards are near Loreauville, La., the office work and sales will be carried on at Northstar, Mich., where all correspondence should be addressed.

Address TOWNSEND & CAMOS, Northstar, Michigan.

June Queens

THEY PRODUCE BEES THAT GET THE HONEY

We offer our improved strain of Imperial Italian Queens at the following prices through June and the remainder of the season: Untested, but pure mating guaranteed, 1 to 9, 90c each; 10 to 24, 70c each; 25 or more, 65c each. Write for our free circular and prices on package bees.

If you can not get better queens than Coffey's.

The Coffey Apiaries

Where they refund your money if not satisfied.

P. O. BOX 8. WHITSETT, TEXAS

CARNIOLANS

are very gentle, very prolific at all times, build very white combs, are little inclined to rob, rarely affected with European foul brood, and are most excellent workers. They breed rapidly during the spring months—a decided advantage in our northern states.

We have successfully shipped full colonies of Carniolan bees to the Department of Agriculture and Forestry, Tokyo, Japan, for breeding purposes. This feat of successfully shipping bees over 10,000 miles across the United States and the Pacific Ocean has never been accomplished before, as far as known, by any breeder of bees, and certainly speaks well for the wonderful vitality of the Carniolan bee. Ask for free paper, "Merits of the Carniolan Bee."

Twenty years' experience with Carniolans. We have breeders imported from Jan. Strgar, the most extensive queen-breeder in Carniola, and M. Ambrozic, an extensive honey-producer in Carniola.

Untested queens, each $1.50
Untested queens, dozen 16.00
Tested queens, each 2.50
Line-bred breeding queen (reared 1926) 10.00

Albert G. Hann, Glen Gardner, N. J.

1927 Package Bees

10% DISCOUNT AFTER JUNE 1.

Light three-banded Italians, shipped on sugar syrup without comb. No disease and safe arrival guaranteed. Health certificate attached. 20 per cent with order.

With select untested queens—1 to 10 2-lb. pkgs., $4.00 each; 10 to 25 2-lb. pkgs., $3.75 each; 25 or more 2-lb. pkgs., $3.50 each. For 3-lb. pkgs. add $1.00 to each above pkg. Without queen, deduct $1 each.

JOHN A. WILLIAMS,
BOX 178. OAKDALE, LOUISIANA

Mott's Northern Bred Italian Queens

All selected queens. Guarantee all to be pure mated, or replace free. No disease. Safe arrival guaranteed. Select untested till June 1, $1.25 each; $1.00 each thereafter. Select tested, $2.00, virgins, 50c. Satisfied customers for 22 years. Michigan bound on the north and east by Ontario, Canada. List free.

E. E. MOTT & SON - GLENWOOD, MICH.

Harrison's

Golden Italian Queens

Prompt delivery. Try them once and you will want them again. One to one hundred, 75c each. Safe delivery and entire satisfaction guaranteed.

J. K. Harrison

ROUTE 1, HONORAVILLE, ALABAMA.

Scott Quality Queens

THREE-BAND ITALIANS

Prices as follows for June delivery on select untested, the prolific kind.

One select untested queen.....$1.00
Six select untested queens..... 5.40
Twelve select untested queens..... 9.60
One hundred select untested queens.... 75.00

We guarantee pure stock, no disease, and perfect satisfaction.

Seventeen years' experience.

The Crowville Apiaries

J. J. Scott, Prop. CROWVILLE, ALA.

Liberty Special Pkg. Bees

Two pounds light three-banded bees with two standard Hoffman frames of honey and brood with select untested queen: 1 to 5 pkgs., $5.00 each; 5 to 10 pkgs., $4.75 each; 10 or more, $4.50 each. Select untested queen, 1 to 12, $1.00 each; 12 to 100, 75c each. Select tested, 1 to 12 queens, $1.50 each; 12 to 100 queens, $1.25 each. Safe delivery guaranteed, health certificate with each shipment. Orders are filled promptly. My bank reference, Avoyelles Bank, Moreauville, La.

The Liberty Apiary

HAMBURG - - - LOUISIANA

High-Grade Golden and Three-Banded Italian Bees

Ready for Shipment

2-lb. pkgs. with young untested queen....$3.50
3-lb. pkgs. with young untested queen.... 4.50
4-lb. pkgs. with young untested queen.... 5.50

A special package consisting of two frames of emerging brood and 3 lbs. bees, with young Italian queen, $6.00.

I furnish a health certificate with each shipment. All loss will be replaced on receipt of a bad-order report signed by Express Agent. Satisfaction guaranteed or money refunded.

Address—

H. H. Bordelon

Box 295. Marksville, La.

Pure Italian Queens

FOR THE NEXT SIXTY DAYS

Untested queens, 75c each; 50 queens, 65c each; $60.00 per 100.

Tested queens, $1.25 each; 10 or more, $1.15 each.

Package bees at any time. We allow 20 per cent overweight for shrinkage.

Iberville Bee Company

Plaquemine, La.

Red Stick Queens

They are RED and they STICK

"Never before have we seen queens perform their duty so well." This is the sentiment expressed by many letters from our growing and wide list of buyers. If you think this is bunk, let us prove that it is not—under our money-back guarantee. If you want to see the height that a Pure Italian strain of bees can reach through careful selection, let our Red Stick queens show you. We are breeding from a mother whose daughters have proven their worth for honey production, heavy laying, extreme hardiness, and beauty.

We guarantee every queen to be purely mated and laying, to reach you safely and give you 100 per cent satisfaction.

Health certificate with each shipment.

Prices to July 1:—1 to 9, 65c; 10 to 49, 60c; 50 to 100, 55c. Add 50c for tested queens.

With powerful deep mating-nuclei, and powerful cell-building colonies, we produce no runts, so sell only one grade of queens—Selected.

Our yards on high land, no danger from floods.

"When queens and bees are better than these,
Red Sticks will lead and better the breed."

Red Stick Apiaries

BATON ROUGE - - LOUISIANA

Rush Orders

GOLDEN ITALIAN QUEENS
PACKAGE BEES

Send us your RUSH orders. We can take care of them. Prompt shipment assured. If we can please the many hundreds of our customers, we can please you too. Let us prove this.

SAFE ARRIVAL AND SATISFACTION GUARANTEED

Quality Queens—1 to 9, $1.25; 10 to 24, $1.10; $85.00 per 100.

Two-lb. packages with quality queens—1 to 9, $3.75; 10 to 24, $3.60; 25 to 50, $3.50.

Three-lb. packages with quality queens—1 to 9, $4.75; 10 to 24, $4.60; 25 to 50, $4.50.

We are also handling a complete line of supplies at prices that any beekeeper can afford to pay. Write for price list if interested.

Valley Bee & Honey Co.

BOX 703. WESLACO, TEXAS.

GOLDEN QUEENS AND BANDED BEES FOR 1927

Untested Queens .....$1.00 each
Tested Queens ..... 1.50 each
Package Bees ..... 1.50 per lb.
Nucleus ..... 1.50 per frame

Bees inspected. Free from disease.

J. W. SHERMAN, VALDOSTA, GA.

JUST NEWS

(Continued from page 389.)

pecially interesting to Montana beekeepers. It is put out by Prof. O. A. Sippel, State Apiarist, Bozeman, Montana.

"Nebraska Bee Tidings" is the title of the wide-awake publication of the Nebraska Honey Producers' Association. The secretary-treasurer of this association is Don B. Whelan, Lincoln, Nebr.

About 20 members of the Maryland Beekeepers' Association witnessed a demonstration of the artificial insemination of queen bees by Dr. L. R. Watson at the Bee Culture Laboratory near Washington, D. C., on May 2. Dr. Watson first gave a brief discussion of the various efforts that have been made during the last 150 years to bring about artificial insemination of queen bees, then proceeded to demonstrate the method which he has worked out for accomplishing this.

The first election of officers of the American Honey Producers' League under the new constitution will take place during this month. The election commissioner, Prof. J. A. Munro, will mail a printed nomination ballot to the last known address of each individual member or organization member. These are to be filled out and returned to the Election Commissioner on or before June 30. The Election Commissioner, after counting the ballots, will announce the name and vote of the five (or fewer) candidates for each office receiving the largest number of votes. On the first Monday in August the Election Commissioner will mail the printed election ballots containing the names of the candidates. These are to be marked and returned to the Election Commissioner by August 31. Within five days after the closing date for the receipt of the election ballots (August 31) the Election Commissioner will announce the results.

Beekeepers of the west central states are slated for an unusual meeting this summer when they get together at Omaha on July 12 and at Council Bluffs across the river on the following day. A partial list of speakers follows: H. H. Root, Medina, Ohio; F. C. Pellett, Hamilton, Ill.; Francis Jager and J. W. Thompson, St. Paul, Minn.; Grover Lothrop, Aberdeen, S. D.; O. G. Borton, Scotland, S. D.; H. C. Cook, Omaha, Neb., and O. W. Park, Ames, Iowa.

The new bee law recently passed by the Missouri legislature has been signed by the governor. It provides for raising funds for inspection work, which is to be in charge of the State Apiarist, who is authorized to destroy diseased colonies provided the owner receives recompense therefor.

TALKS TO BEGINNERS

(Continued from page 385.)

top. In any case, toward the close of the blooming-period of the plants furnishing the surplus honey, if several supers are on the hive they should be so arranged, if possible, that those nearest finished will be well filled. To bring this about the super in which least work has been done may be placed on top and those which are nearest completion can be place near the brood-chamber. It is often a good plan to put the super that is nearest completed in the position of second above the brood-chamber, with the others arranged above it in the order they were originally given, the one in which the least honey has been stored being on top of the pile. When arranged in this way, if the flowers should fail unexpectedly or the weather conditions become bad for nectar secretion the newly added super may be taken from its position below the others and placed on top to hasten the completion of those which are nearest finished and induce the bees to carry the unsealed honey from the super in which the least work has been done and place this honey in the others.

J. L. Gaspard's

HIGH QUALITY GOLDEN AND THREE-BANDED ITALIAN BEES

Very best strain that can be produced. New low price for May and June delivery. Two-pound packages with queen, one to ten, $3.25 each; each additional pound, $1.00. All packages shipped on a frame of brood and honey, built from Dadant foundation, Hoffman frame. Frames nuclei same price as pound packages. Liberal discount on quantity. Health certificate attached. Ten per cent books your order. Circulars sent. Remember Kellogg's Cereals.

Reference, People Saving Bank & Trust Co.

Address J. L. Gaspard, Hessmer, La.

QUEENS
50c Each

FOR ONE OR 100.

Safe delivery and satisfaction guaranteed.

Lake Shores Apiaries

COVINGTON - LOUISIANA

"COMIN' AND GOIN'"

Well, this am a great age—everybody reads the newspaper and it's surprisin' how fast some news travels. Do you know, I'se just about decided that when my grandchild leaves me that fortune I've been lookin' for, I will just announce it in the paper and save writin' to them relatives. If I can just make it interestin' enough the first time it appears in print, why, every printer's devil in the country will be settin' it in type. Why, the other day a man in Cavendish, Vt., bought a house and found twenty pounds of honey in the chimney. Well, one of these 'ere editors wrote it up, and since then I have read about it in over thirty papers. The article didn't amount to much, but it was interestin'. This all helps me in my publicity—except the day ain't long enough for me to read and write and spade my "brick clay" garden. Just so, I'm goin' to get caught up on my readin', because as hard as it is to believe, I broke the handle on that 'ere spade. I'm going to spend more time in pickin' out the next spade than some womin do on a dress. If you know of a good spade, why, just send it in—I mean the name.

The happiest day of my young life.

(Continued on page 406.)

Hi-Grade Three-Banded Italian Queens

From Alabama's Finest Honey Producing Strain

60c each

Any Number

Safe arrival and satisfaction guaranteed.

Jno. C. Hogg

Ramer, Alabama

Queens---Golden Queens

I am offering queens that are raised with greatest care and according to best methods known. Not one complaint from my many customers living in 33 states. They should please you.

Single queens, $1.00; 10, $9.00; 25, $20.00; larger lots, 75c each.

M. STEVENSON, WESTWEGO, LA.

GOLDEN ITALIAN QUEENS BRED FOR BUSINESS

Only one grade—select. Safe arrival and satisfaction guaranteed.

Untested, 1, $1.00; 12. $10.00. Tested, $2.50 each.

1-lb. pkg. of bees and untested queen, $3.00; 2 lbs., $5.00. All mail charges paid.

E. A. SIMMONS - - GREENVILLE, ALABAMA

QUEENS--QUEENS--QUEENS

SELECT THREE-BANDED ITALIAN QUEENS

All orders filled by return mail. Our queens are bred from the best stock. Only select drones are allowed to fly. No disease. Apiaries under state inspection. Safe arrival and satisfaction guaranteed or your money will be refunded.

$1.00 each, $11.00 per dozen

Special price on 100 or more.

We are prepared to ship 2000 queens per month.

Write for descriptive circular.

Middle Tennessee Apiaries - Spring Hill, Tennessee

Queens, Yes---60c by Return Mail---Any Number

Young laying A No. 1 Italian queens for June and July delivery. Queens will be reared from a natural honey flow from clover. It doesn't cost anything but labor. That is why I can offer them so cheap. Queens reared from a natural honey flow are superior to those reared under artificial sugar flow. All queens large in size, pure mated.

1 2-lb. pkg., $3.50; 10 or more, $3.25 each; 1 3-lb. pkg., $4.50; 10 or more, $4.25, with queens.

Safe arrival, satisfaction guaranteed in U. S. A. and Canada.

N. Norman, Apiarist, Ramer, Ala.

Queens, Package Bees

AND NUCLEI FOR SPRING DELIVERY 1927

Our very best honey-producing stock of gentle three-banded Italians.

One 2-lb. package with young laying queen, $3.75; 5 packages, each, $3.60; 10 packages, each, $3.50; 25 or more, $3.40. For the 3-lb. packages, add $1.00 per package. Two-frame nuclei same as 2-lb. packages; three-frame nuclei same as 3-lb. packages, F. O. B. Luverne.

Queens, one, $1.00; six, $5.00; twelve, $9.50; one hundred, $70.00. Tested queens, $1.50 each, or $16.00 per dozen; 20 per cent books your order. Begin shipping April 15. We guarantee safe arrival, satisfaction on everything we ship.

TAYLOR APIARIES, Lock Box, Luverne, Ala.

GOOD QUEENS 60c

Any Number, Untested. Tested, $1.50 each.
Three-Band Queens, Carefully Raised.

D. W. HOWELL, SHELLMAN, GA.

Scott Queens Are Good Queens

During 1927 I will rear about 1000 queens besides those for use in my own yards. Every queen reared and caged by me personally. They are bound to please. Ready June 1.

Selected queens, $1.00 each; $10.00 per dozen. Three-banded only.

ROSS B. SCOTT, ROUTE 7, LA GRANGE, INDIANA

Queens

Each year I do my very best to improve my stock, by constantly requeening from the best. This year we believe our stock is still better than last. We requeen every year and if any queen does not measure up to our standard she is killed and the colony again requeened. This careful culling has given us drones of the best breeding so that practically never do we have a mismated queen. This year we will turn out queens that we will be proud of, and from past experience we know those who purchase them will be equally pleased. You want queens that produce bees that will get the honey, that are gentle, that are resistant to disease, and that are of a beautiful yellow color. In these respects our bees will be better than ever before. If you do not possess our free book, "About Bees," write for it.

Our price before July 1: 1 to 4 inclusive, $2.00 each; 5 to 9 inclusive, $1.95 each; 10 or more, $1.90 each. **After July 1:** 1 to 4 inclusive, $1.50 each; 5 to 9 inclusive, $1.45 each; 10 to 24 inclusive, $1.40 each; 25 to 49 inclusive, $1.35 each. Breeding queens, service guaranteed for the season, $10.00 each.

JAY SMITH

Route 3. Vincennes, Indiana.

Patents

Pat. Counsel of The A. I. Root Co. Practice in Patent Office and Court.

CHAS. J. WILLIAMSON
McLachlan Building, Washington, D. C.

Sunnyland Bees and Queens

FOR JUNE DELIVERY

Light Three-Band Italian, Gentle and Very Profitable.

Combless pkg., 2-lb., no drones, full weight, syrup feeder in cage, with select untested queen, $3.50; 10 or more, $3.40. **Nucleus:** Bees on comb ship well, are easily transferred to hive, and build up to full colonies quickly; 2-fr. with untested queen, $3.50; ten or more, $3.40. Three-frame size, $1.00 more.

Queens: We have them that will please. The queen is the heart of the colony, the best cost no more. One, $1.00; six, $5.00; dozen, $9.00; hundred, $65.00.

Everything disease-free and guaranteed. State inspected. Money back if not satisfied.

Crenshaw County Apiaries
Rutledge, Alabama

Superior Italian Bees and Queens

RUSH ORDERS

All June orders are rush orders because it is important that there be absolutely no delay in receiving your order, if the package is to build up into a populous colony in time for the honey flow. Realizing what it means to you, we have prepared for it as follows:

Fed 3,000 colonies, so they will have plenty of Baby Bees emerging.

Put 5,000 queen-mating nuclei in operation, so we will have young queens to go with all orders.

Have already nailed up more packages than we will require this season.

Have an efficient crew of fourteen men, with nothing to do but get up Package Bees.

Can you get the above for any less? Good packages at a fair price are cheap. Poor packages are high at any price. Safe arrival and satisfaction guaranteed.

PRICES:

Two-pound packages, with queens—1, $4.25; 5, $4.00 each; 10, $3.75 each; 25, $3.65 each; 50, $3.50 each; 100, $3.35 each.

Three-pound packages, with queens—1, $5.25; 5, $5.00 each; 10, $4.75 each; 25, $4.65 each; 50, $4.50 each; 100, $4.35 each.

Italian Queens

Nothing but the very choicest queens, and at the same reasonable price. Your order, large or small, will be appreciated and have our prompt and careful attention.

PRICES:

To June 15th: Untested—1, $1.00; 10, 85c each; 100, 75c each. Tested 50c more per queen.

After June 15: Untested—1, 80c; 10, 70c each; 100, 60c each.

The Stover Apiaries TIBBEE STATION MISSISSIPPI

Telegraph Office and Shipping Point, Mayhew, Mississippi.

Alabama

Queens & Package Bees

Package Bees Shipped Until June 15.

Price List for 1927. I Pay All Transportation Charges

1-lb. package with sel. unt. queens..$3.00 each
1½-lb. pkg. with sel. unt. queen.. 3.75 each
2-lb. pkg. with sel. unt. queen.... 4.50 each
2½-lb. pkg. with sel. unt. queen.... 5.00 each
3-lb. pkg. with sel. unt. queen.... 5.50 each

25c less per package on orders for 10 or more packages. 40c less per package on orders for 20 or more packages.

Sel. unt. queens, 75c each; 10 for $7.00; 20 or more, 65c each.

Prompt shipment, safe arrival, pure mating, and entire satisfaction guaranteed on everything I ship. Claims adjusted by return mail. I have no disease and a 1927 health certificate is attached to each shipment.

Hayneville Apiary Co.

W. E. Harrell, Prop. HAYNEVILLE, ALA.

Morrison & Martin's Three-Banders

We have increased our apiaries and queen-mating capacity 200 per cent, so will be able to take care of queen orders promptly. We have been building up this strain for comb-honey production for the past (16) sixteen years. With our methods of management we produce large crops of comb honey year after year with very little swarming. This strain has been bred up for gentleness, prolificness, honey-gathering qualities, and cap their honey white.

Queens are now ready at the following prices: Untested, one, $1.00; six, $5.50; twelve, $10.00; one hundred, $75.00; tested, $1.50 each, in any number. Breeders, $5.00 each. Safe arrival and perfect satisfaction guaranteed.

Morrison & Martin

P. O. Box 65 Mandale, Ohio

Telegraph Station, Cloverdale, Ohio.

Norman Bros.' Queens

QUEENS AND BEES BY RETURN MAIL

Mr. Beekeeper, let us have your order. We are better prepared than ever before. We have the stock, equipment, and experience. Our prices are right, our queens are equal to any. We have spared neither labor nor expense to make them the very best.

We guarantee satisfaction, pure mating, safe arrival in U. S. A. and Canada. We furnish state health certificate with each shipment.

Norman Bros. Apiaries, Naftel, Ala.

Prices Smashed

Untested queens, any number, 60c each.

Select Untested, any number, 65c each.

Package bees, F. O. B. shipping point. One 2-lb. package, with select untested queen, $3.75 each; 12 or more, $3.50 each. One 3-lb. pkg. with select untested queen, $4.50; 12 or more, $4.25 each.

Leininger's Strain of Italian Queens

The Old Reliable Northern-Bred Stock

We have been queen-breeders for 50 years. In all this time we have tested nearly every strain of Italian bees in the U. S. A. By this careful selection and breeding we have succeeded in producing a strain of bees that are gentle and great honey-gatherers. Queens from this superior strain for sale at the following prices:

UNTESTED QUEENS—1, $1.00; 6, $5.50; 12, $10.50. TESTED, $1.50 EACH.
Safe delivery and satisfaction GUARANTEED.

Fred Leininger & Son, Delphos, Ohio

QUEEN TALKS

By M. J. Deyell, Apiarist

A TRICK OF THE TRADE

(Talk No. 18.)

The up-to-date farmer who finds some scrub milk cows in his herd is obliged to dispose of the undesirables and replace them with good stock if he expects to maintain a high average production.

Likewise, the aggressive beekeeper is on the alert to detect failing or undesirable colonies of bees. How simple is the solution of the beekeepers' problem as compared with that of the stockman! It is not necessary for the beekeeper to dispose of his undesirable colonies and purchase new ones. By simply removing the queens from vicious and non-producing colonies, and introducing young prolific queens of a known gentle and honey-gathering strain the temperament and honey-gathering qualities of such colonies are, in a comparatively short time, entirely changed.

One honest-to-goodness colony, given the right sort of management, will store more surplus honey than half a dozen scrub colonies. So why tolerate scrub colonies when good queens and good apiary management will turn the trick?

Root Quality Queens

Give Our Three-Banded Italians a Trial and be Convinced of Their Merit

	To June 15		After June 15		
Quantity:	1 to 9.	10 or over.	1 to 9.	10 to 49.	50 or over.
Untested	**$1.50 ea.**	**$1.25 ea.**	**$1.25 ea.**	**$1 00 ea.**	**$0.85 ea.**
Tested	**2.50 ea.**	**2.25 ea.**	**2.25 ea.**	**2.00 ea.**	**1.85 ea.**
Select Tested	**5.00 ea.**		**5.00 ea.**		

Our UNTESTED QUEENS are young, fertile queens reared this season. that prove to be approximately 99 per cent purely mated.

Our TESTED QUEENS are older queens guaranteed purely mated.

Our SELECT TESTED QUEENS are choice tested queens that might be used as breeding queens, although they are not tested for breeding purposes.

OUR GUARANTEE ON QUEENS

We guarantee safe arrival of queens sent in mailing cages to customers in the United States and Canada, but not to island possessions or other foreign countries. We agree to refund the money or replace the queen if the one first sent arrives dead, provided the beekeeper receiving the dead or unfit queen notifies us and returns her at once and in her own shipping cage, properly marked with name and address of sender. No delay in returning the queen can be permitted.

Prices of Bees in 2-lb. Combless Packages by Express

	1 to 9 pkgs.	10 to 24 pkgs.	25 or more pkgs.
2-lb. package of bees	**$5.00 each.**	**$4.50 each.**	**$4 00 each.**

Add price of queens wanted to price of package bees given above. These prices are f. o. b. shipping point.

The A. I. Root Company, West Side Sta., Medina, Ohio

High-Grade Golden Queens

Extra nice, large, gentle, good honey-gatherers, and beautiful, producing beautiful bees.

Prices: (Select one grade), $1.00 each; five, 80c each; ten or more, 75c each. No charge for clipping. Pure mating, safe arrival, and satisfaction guaranteed. Inspector's health certificate. Immediate shipments.

THE GOLDEN APIARIES

LETOHATCHIE, ALA.

Jasper Knight, Owner. J. F. Bargaineer, Mgr.

"COMIN' AN' GOIN'."

(Continued from page 401.)

Well, gettin' back to all this 'ere readin' matter about honey, you'd be surprised to know that during April I received over 500 clippin's mentionin' honey. Here are the titles of some: "Half Million Bees to Come for Use Here in Orchards," "Renting Bees to Fruit Growers," "Honey is Healthful," "Eighty Dollars an Acre from Honey," "Busy as a Bee," "Honey is a Wholesome Food," etc. Some of them were long, some were short, some were real interestin', and some were not. I thought most of those that were interestin' were written from some material I sent out. You can easily see that there are a large number of subjects on which one can write. That reminds me. I got those six fine articles all printed up and a letter will bring a set to you, also make you honorary member of my publicity association. Perhaps you would like to

(Continued on page 410.)

Pure Italian Queens

Of tested quality, April to November delivery. Bees inspected. Select untested, $1.00; dozen, $9.00.

Hunter & Reamy, Quitman, Ga.

Glass and Tin Honey Containers

2½-pound cans in cartons of 100	$4.00 carton
5-pound pails in cartons of 50	3.50 carton
10-pound pails in cartons of 50	5.00 carton
60-pound tins, NEW, 2 tins per case	1.00 case
60-pound tins, USED, 2 tins per case	.35 case
160-lb. Kegs (the ideal container for both buckwheat and clover honey)	$1.20 ea.

Glass Jars with Gold-Lacquered Caps

16-oz. honey capacity, 2 doz. per carton	$1.20 carton
3-lb. or quart capacity, 1 doz. per carton	.90 carton

Special Hazel-Atlas Tall Jars

8-oz. honey capacity, 2 dozen per carton	$1.05 carton
16-oz. honey capacity, 2 dozen per carton	1.35 carton
2-lb. honey capacity, 1 dozen per carton	.95 carton

BEE SUPPLIES

AT SPECIAL PRICES. SEND FOR OUR PRICE LIST

HONEY

ALL GRADES—ANY QUANTITY

Hoffman & Hauck, Inc., Ozone Park, N. Y.

Smith's

Superior Three-Banded Italian Queens by Return Mail

Many years ago we purchased queens of the leading breeders of the country. From each of the several purchases we selected the prettiest, gentlest, and thriftiest queens, and from these have scientifically bred for the period, and have produced what we believe to be the prettiest, gentlest, and as good a honey-gatherer as there is in America. This is the testimony of hundreds of customers throughout the country. All work is done by owners of the business, and we offer the best services obtainable. Safe arrival, satisfaction, and no disease guaranteed. One order makes a satisfied customer.

1-6, 70c; 7-49, 65c; 50 up, 60c, after June 10; before that date, 10c more.

W. C. Smith & Company
Calhoun, Alabama

BEES

Two pounds of bees with queens, each...$3.60
Three pounds of bees with queen, each.. 4.60

Five per cent discount on 100 or more packages. Bees shipped in light strong cages by express only. You may be sure to get prompt service from me.

QUEENS

Untested, each, $1.00, in any quantity until May 10; after, per dozen, $10.00; per 100, $85.00. Tested, each, $1.50; per dozen, $15.00.

Breeding queens: I have a number of very fine breeders, too good to be used only for honey production, and should be used to raise daughters that will produce bees that get the honey. I challenge the world to produce better bees than I offer.

Breeders, each, $5.00, or with a nucleus of her own bees, $8.00.

I have been breeding and shipping bees since 1889. There is no disease; health certificate with every shipment. Safe delivery guaranteed. I breed only the light three-banded Italians.

Address plainly—

W. H. LAWS
BOX 505. WHARTON, TEXAS.

Old Reliable

THREE-BANDED ITALIAN QUEENS

Bred by experienced queen-breeders by the best approved method. Our aim and reputation is quality queens, not quantity. Our queens have produced large honey crops for others; they will satisfy you.

Pure mating, safe arrival, and satisfaction guaranteed. Health certificate with each shipment.

Select untested queens, $1 each, six for $5.50; twelve for $10.00; one hundred, $75.00.

P. M. Williams
Mount Willing, Ala.

Achord Queens

The Best of Pure Three-Banded Italians

Select Young Laying Queens
now, $1.00 each
any number

After June 15th
75c each, any number

W. D. Achord
Fitzpatrick - - Alabama

Buy Lotz Sections

Because:

They are manufactured of the best material obtainable for the purpose—second growth basswood.

They measure full in all dimensions, have a glossy polish, and fold square without breaking.

They increase the attractiveness of your comb honey.

Lastly, the quality is equal to that of the best, while the prices are lower.

WRITE FOR FREE SAMPLES AND A COPY OF OUR CATALOG

August Lotz Company
BOYD, WISCONSIN

"Instant Service"

Leahy's Standard Bee Supplies

Honey Containers

Dadant's Wired Foundation

No delays. Our stock is packed ready to move. You do not have to wait for your order to be cut after it is received.

Write for our Bee Supply Catalog.

W. R. PERRY COMPANY
1209 Howard St., OMAHA, NEBR.

Hutzelman's Solution

--for--

American Foul Brood

USE ALCOHOL-FORMALIN TO BE SAFE

Ask your dealer, or write to

J. C. Hutzelman
Glendale - - Ohio

Bee Supplies

THAT ARE MADE RIGHT AT RIGHT PRICES

Our ever growing list of satisfied customers is convincing proof that our goods are made to satisfy the most critical buyers of bee supplies.

OUR PRICES are low when you consider the workmanship and material used in manufacturing our supplies.

OUR SERVICE is such that you are sure of getting "what you want when you want it."

We have a large stock of sections, shipping cases, and Hoffman frames, which we are offering at very low prices.

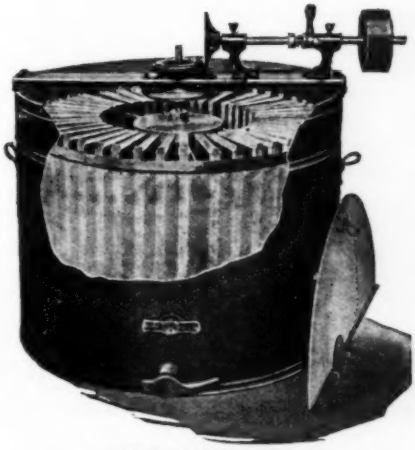
It will pay you to get our prices on your requirements before placing your order.

Write for our catalog.

A. H. Rusch & Son Co.
REEDSVILLE, WISCONSIN.

---The---
Greatest Selling Extractor
on the Market

Why?



THE SIMPLICITY

Capacity:

45 frames, any size, requires only one-fourth of operator's time.

Speed:

Will average 180 combs per hour or 10,000 lbs. per day.

Efficiency:

Extracts more honey, thick or thin, cold or warm out of the comb in a given length of time than any other extractor.

Price:

The lowest priced large extractor made anywhere.

Simplicity Extractor **$190.00**

TWO, FOUR, AND EIGHT FRAME REVERSIBLE EXTRACTORS IN STOCK. ORDER FROM YOUR ROOT DISTRIBUTOR.

Root QUALITY BEE SUPPLIES

The A. I. Root Company
Medina, Ohio

Stone's Package Bees

We give you young three-banded Italians, prompt shipment, and cheap transportation from extreme north Texas.

Nuclei on combs drawn from Dadant's Wired Foundation or Root's Three-ply. Package bees combless, fed on sugar syrup. 2-pound package, $3.00. Three-pound package, $4.00. Add price of queen, $1.00. Nuclei same price as packages. No disease. Guaranteed satisfaction. See classified add for bargain in combless package bees.

Baughn Stone

P. O. Box 444, Clarksville, Texas

"COMIN' AN' GOIN'."

(Continued from page 406.)

know the titles of these six articles. They are as follows: "Honey Used Since Dawn of History," "A Lesson in Organi-

Never knew there were so many papers publishing articles on honey.

zation and Thrift." "Seasonal Development of the Bee Colony," "How the Bees Make Honey," "Evolution of Method of Production of Honey," "Honey—What It

(Continued on page 414.)

For Results, Buy Thrifty Bees

We are in position to make 24-hour delivery on your June orders for package bees and queens. Our good service and THRIFTY three-banded Italian bees are sure to please.

Notice our attractive prices on queens. We have the equipment to supply your needs, large or small, and our 35 years' experience insures you of the finest bees and careful attention to every detail.

We guarantee pure mating of all queens and safe delivery and satisfaction on all bees and queens.

Untested Queens—1 to 11, 80c each; 12 up, 70c each; 100, 60c each.

Package bees with untested queens for delivery by express F. O. B. shipping point: Two-pound packages, 1 to 5, $3.70; 6 to 25, $3.45; 26 up, $3.25. Three-pound packages, 1 to 5, $4.70; 6 to 25, $4.45; 26 up, $4.20.

Ask for further information.

W. J. Forehand & Sons

Fort Deposit - - Alabama

Remember THRIFTY BEES are guaranteed to please.

No Excuse for Weeds Now---

NO matter how hot the weather nor how hard the ground, no matter how busy with other things, now your garden can have the care that you know it should have. With a **BARKER** it is so easy and takes so little of your time.

Weeds cannot survive the rotary blades, working in combination with the underground knife. They are severed, often in many pieces and their roots exposed to the sun. Even the sprouting weeds not yet up are thrown out to wither and die. **"BEST WEED KILLER EVER USED."** In the same operation the **BARKER** breaks up the clods and crusted surface into a level, porous dust mulch—finest cultivation possible.

No stooping, or bending, no chopping, no tugging, jerking, no shoving down, no strain on the arms and shoulders. A boy can use it, and do more and better work than ten men with hoes. It gets close to the plants; guards protect the leaves. Has shovels for deeper cultivation. Inexpensive. Used in every state and in more than 25 foreign countries.

WRITE TODAY for our catalog, free and postpaid. Shows many photographs of the **BARKER** and its work, explains the construction, tells what gardeners and florists say about it, gives the various sizes and the prices delivered to you. **A postcard will do.**

BARKER MFG. CO., BOX 116 DAVID CITY, NEBRASKA

Knight's Queens

Line-Bred Three-Banded Leather-Colored Italians

Bred for gentleness and good honey-gathering qualities for 21 years.

PRICES

1 Select (one grade) young laying queen	$1.00
5 Select (one grade) young laying queen	4.00
10 or more, each	.75

All queens guaranteed mated pure and to give satisfaction. No charge for clipping. Can still furnish 2-lb. package bees with queen for $4.50; 3-lb. size, $5.50, F. O. B. buyer's address. No disease. Health certificate. Immediate shipments. Safe arrival and satisfaction guaranteed.

Jasper Knight, Hayneville, Alabama

BERRY PREPAYS THE TRANSPORTATION

Berry's Reliable Bees and Service Await Your Commands

Queens Save That Queenless Colony Now Ready for Immediate Shipment **Queens**

1-lb. packages with queens, $3.25 each; 10 or more, $3.00 each.
2-lb. packages with queens, $4.25 each; 10 or more, $4.00 each.
3-lb. packages with queens, $5.25 each; 10 or more, $5.00 each.

SELECT 3-BANDED ITALIAN QUEENS BY RETURN MAIL—UNTESTED, $1.00 EACH; $11.00 A DOZEN; $45.00 FOR 50; $90.00 PER 100.

All queens are warranted purely mated. Wings clipped on request free of charge. Safe arrival guaranteed along with entire satisfaction, re to both queens and packages. No disease. A health certificate accompanies every shipment.

Above prices on packages are for the United States only. Queen orders accepted from both United States and Canada. All orders filled by return mail. All queens are young 1927, daughters of great Canadian and U. S. mothers, tested out for their wonderful wintering and honey-gathering qualities. 1927 circular and price list is now ready.

M. C. Berry & Co., Montgomery, Ala.

P. O. Box 697

Queens WE HAVE THEM READY NOW **Queens**

----Yes---

Italian Bees and Queens Ready

We are now mailing queens out promptly. Package bees ready now. The queen that you get with your package bees is most important. Let **CITRONELLE BEES** and **QUEENS** harvest a larger crop of honey for you this season. Bees shipped on syrup except by mail. Bees, express collect.

Quantity:	1-25	25-100	100-1000
2-lb. package and queen	$3.50	$3.25	$3.00
3-lb. package and queen	4.50	4.25	4.00

QUEENS PREPAID

Quantity:	1-12	12-100	100-1000
Untested queens	$1.00	$0.85	$0.75
Tested	1.50	1.40	

QUEENS AFTER JUNE 15th:

	1-12	12-1000
Untested queens	$0.75	$0.60
Tested	1.30	1.00

Health certificate furnished with each shipment. **We guarantee satisfaction or money back.** Can supply Dadant's foundation at Dadant's prices.

The Citronelle Apiaries, Citronelle, Alabama

Moore's Strain

Away back in 1879 I commenced rearing Italian queens with the object of improvement constantly in view.

By careful selection during all these years I have succeeded in producing a strain of three-banded, leather-colored Italian bees, known as **MOORE'S STRAIN OF ITALIANS**, which has won a world-wide reputation for honey-gathering, hardiness, gentleness, etc.

Mr. A. K. Whidden, San Jacinto, Cal., says: "In 1913 80 per cent of the bees in this district died of European foul brood. I had an apiary of 60 colonies headed by daughters of your queens in which I did not lose a colony, and in 1914 they made 360 lbs. per colony.

"In 1917 I bought 12 queens of you and introduced them to diseased colonies. Four of them became too weak to recover, and they all got rapidly worse until it looked impossible for any of them to recover. In eight of them, as soon as the young bees from your queens began to hatch, the disease began to disappear. They cleaned up and stayed clean."

I am now booking orders for June delivery or later.

Untested queens, $1.00; 6, $5.00; 12, $9.00. Select untested, $1.25; 6, $6.00; 12, $11.00. Safe arrival and satisfaction guaranteed. Circular free.

J. P. MOORE
MORGAN, KENTUCKY

Queens

By Return Mail

With a thousand nuclei and three experienced men, we are now in position to care for all orders promptly. Our queens hold many high production records. Why not pay a few cents more and get the best?

Safe arrival and satisfaction guaranteed. Health certificate with each shipment. 1 untested, 80c; 12 for $9.00. Tested, $1.75 each. Write for description and complete price list, also prices on quantities.

J. M. Cutts & Sons
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(Continued from page 410.)

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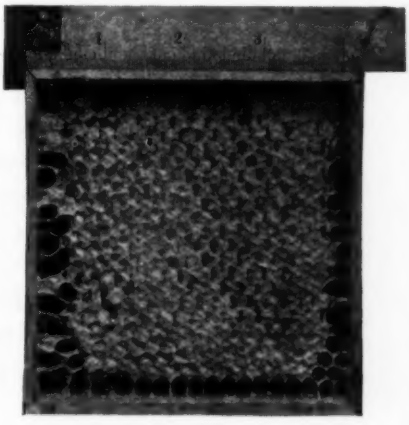

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